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(U) RUNTIME CONVERSION AND BENCHMARKS FOR THE FAMIS DECISION SUPPORT SYSTEM

by

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The prototype Fly Away Management Information System (FAMIS) works too slowly to be useful. This report outlines efforts to speed the system up and compares each technique. This report indentifies approaches to producing a fast interim version of the FAMIS system.

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(U) RUNTIME CONVERSION AND BENCHMARKS FOR THE FAMIS DECISION SUPPORT SYSTEM

by

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January 1986

Summary

The prototype Fly Away Management Information System (FAMIS) works too slowly to be useful. This report outlines efforts to speed the system up and compares each technique.

Problem

The current version of the FAMIS system runs in interpreted BASIC on the Otrona microcomputer system. Because the system is interpreted and implemented on a slow floppy disk based system, it is too slow to be workable.

Objective

This report identifies approaches to producing a fast interim version of the FAMIS system.

Approach

Three approaches were used these included:

1. Modifying and compiling the system.
2. Implementing the system on a hard disk.
3. Moving the system to a computer with a faster processor.

Results and Conclusions

The changes resulted in an improvement in speed of better than a factor of five.

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LIST OF FIGURES

The current version of the FAMIS system runs in interpreted BASIC on the Otrona microcomputer system. Because the system is interpreted, it runs very slowly. One of the research tasks in the FAMIS project, was to produce a compiled version of the FAMIS system. This proved to be a more difficult task than simply compiling the available code.

The first approach taken to this problem involved condensing all the routines into a single BASIC program, then trying to compile them as a single program. This approach did not work, because BASIC compilers available are restricted to blocks of code no larger than 64K. We did obtain one BASIC compiler, the BetterBASIC compiler that was able to handle up 640K blocks of code. This compiler, however, was not compatible with the Microsoft BASIC that we were using.

The next step was to try compiling the individual routines separately. It turned out that this was not possible either. The main routine uses a CHAIN MERGE command to transfer control to the various modules. The CHAIN MERGE command requires you to keep a core module in memory at all times. The subsidiary modules are then loaded into an overlay area under the control of the core module. In interpreted BASIC, this is an efficient way to handle large programs. To compiled BASIC, it is not possible to do this. The CHAIN MERGE command does not exist in compiled BASIC.

This meant that a major problem, then, was to rewrite the system so that it could work without the CHAIN MERGE. This was done by adding a small core module to each of the subsidiary routines that performed the graphic functions that were previously done in the module that controlled the CHAIN MERGEs. This makes each of the subsidiary routines somewhat larger than they were in the original program. However, this turns out to be small price to pay for the increase speed offered by compiled BASIC.

In addition, there were other design goals for the compiled BASIC system. A major design goal was to create a system that could be used on both a hard disk and floppy disk versions of FAMIS. It is undesirable to have to separate programs for the FAMIS. With two separate programs, maintenance becomes very nearly impossible. It is too hard to control two versions of the same program in making changes. It is virtually inevitable that the two versions of the programs will diverge.

When running a hard disk system, it is far more convenient to have both programs and data files on the same unit. In this way, the computer does not keep interrupting

the user asking for the installation of a floppy disk. This constant querying of the user for the proper disk is necessary in the floppy disk version of FAMIS. There is not enough storage on a single floppy disk to store all of the information that FAMIS must coordinate.

The rewritten version of FAMIS is usable on both hard disk and floppy disk systems. The new programs query the disk drive assignment to determine whether a hard drive or floppy drive is being used. In rewriting the new version for the compiled system, we went through and we added a drive qualifier to every file command in the entire program. In the original program, the system automatically to its data from the B drive.

In the new version, the system automatically looks to whatever drive the user has selected at the beginning of the program. The data is then taken from that drive. If the drive is a floppy drive, the program asks for the user to mount the correct disk at the break points they were existing in the original program. If the drive is a hard drive, then the no queries are generated. The resulting system is small enough that it may be used on either a floppy or hard disk system.

There are still a number of errors in the FAMIS code. These existed in the interpreted version, and they have been carried over into the compiled version. There is no reason to spend a great deal of time in correcting these errors in FAMIS. FAMIS is nearing the end of its life cycle, and these errors may as well stay as long as they are not too much of a problem.

Some of the errors are a result of different programming styles used in BASIC. An example is the code that test uninitialized variables. This code is in the core routine and is placed in such a way that it does not cause logical problems. However, it is indicative of a sloppy approach to programming that one does not expect to find in professional code.

In addition, there are undeclared arrays scattered throughout the program. This is something that BASIC allows, the good programming practice suggests that this should not be done. Besides these, there are several error finishes and caused to nonexistent routines. These existed in the interpreted version, and they are still there in the compiled version.

In testing the new version of FAMIS, several benchmarks were run to provide comparisons. Results of these comparisons are given in Figure 1. There are three variables involved in these comparisons. The first is type of BASIC used, either interpreted or compiled. The second is whether the system was a floppy disk or hard disk system. And the third variable is whether a fast or slow processor was used.

The slow processor is an ordinary IBM PC Intel 8088 based system operating at 4.77 megahertz. This is the same system that was used in Otrona. The fast processor used in this test was an 80186 based system, an Orchid PC Turbo card. This system

Case 1

Interpreted Basic
Floppy Disk
Slow Processor - 4.77 megahertz 8088

Time Test: 216 sec. Factor: 5.54

Case 2

Interpreted Basic
Hard Disk
Slow Processor - 4.77 megahertz 8088

Time Test: 187 sec. Factor: 4.79

Case 3

Interpreted Basic
Floppy Disk
Fast Processor - 8 megahertz 80186

Time Test: 125 sec. Factor: 3.21

Case 4

Interpreted Basic
Hard Disk
Fast Processor - 8 megahertz 80186

Time Test: 105 sec. Factor: 2.69

Case 5

Compiled Basic
Floppy Disk
Slow Processor - 4.77 megahertz 8088

Time Test: 91 sec. Factor: 2.33

Case 6

Compiled Basic

Hard Disk
Slow Processor - 4.77 megahertz 8088

Time Test: 68 sec. Factor: 1.74

Case 7

Compiled Basic
Floppy Disk
Fast Processor - 8 megahertz 80186

Time Test: 62 sec. Factor: 1.59

Case 8

Compiled Basic
Hard Disk
Fast Processor - 8 megahertz 80186

Time Test: 39 sec. Factor: 1.00

Figure 1: Results of the Benchmark Tests

operates at 8 megahertz and uses a disk caching system and is roughly comparable to an IBM PC-AT in speed.

The tests presented in Figure 1 consisted of running the FAMIS system to give a network status. The run started with the initial loading of the system in the configuration being tested. We then went to the initial banner logo, the first menu, and then to the network status menu. In the network status menu we selected DOD and did a status on the AUTODIN system at the USA level. This caused to generation of a United States map and the sites of the AUTODIN system. After that, we asked for a status listing for the systems nodes. This concluded the test was concluded and the time required to arrive at this point was recorded.

The cases in Figure 1 are arranged in descending order of time required. Case 1 presents the current system. This involves interpreted BASIC, a floppy disk and a slow processor. Two hundred sixteen seconds were required to run the demo program. This is a factor of better than five and a half times slower than the fastest configuration tested.

Case 2 uses interpreted BASIC that moves the system to a hard disk. We are still operating on a slow processor. This paired a bit of time of, only a 187 seconds were required to run the demo. Case 3 still involves intepreted BASIC using a floppy disk system but not we've moved to a fast processor. This would the equivalent to running the system on a AT with a floppy disk based system. This time a 125 seconds were required for the demo. The next case uses interpreted BASIC hard disk and fast processor. In this configuration, 105 seconds are required for the demo.

The most dramatic improvements in time seem to come from compiling the basic version of the FAMIS system. The last four cases in Figure one all use compiled BASIC. Case 5 used compiled BASIC, floppy disk and slow processor and reaches the conclusion of the test in 91 seconds. Case 6 used compiled BASIC, a hard disk, and slow processor and the tests concludes in 68 seconds. Case 7 uses compiled BASIC, floppy disk, and fast processor and the test concludes in 62 seconds. Finally, Case 8 used compiled BASIC, hard disk and the fast processor and reaches a conclusion in 39 seconds.

A significant portion of this time is used to generate the United States map. If we were to use the fast load graphics it would use the C programs, then this 39 seconds could probably be cut in half. A significant portion of the remaining time then is operator reaction time, and there is no way to cut this down.

The use of compiled BASIC offers a significant increase in speed to the current FAMIS system. Case 5 represents the Otrona system after the use of compiled BASIC. Its speed is 91 seconds to reach the conclusion of the demo program. This is about 2.4 times faster than the current system. The current system is unacceptably slow. This one is at least somewhat better. If a hard disk is added to the Otronas the figures are even better. A hard disk in compiled BASIC brings the system speed up to nearly 3.2 times faster. This should make the Otrona demos quite a bit more impressive.

Appendix A

NCS.BAS Listing

```
01 COMMON DRV$
10 SCREEN 0,0,0
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C: LASTFILE$=" "
31 CLS
32 LOCATE 10,20
33 PRINT "Set the Caps Lock Key On";
34 LOCATE 12,20
35 PRINT "Which drive contains your data";
36 INPUT DRV$
37 IF DRV$<"A" OR DRV$>"D" GOTO 31
38 DRV$ = LEFT$(DRV$,1)+":"
40 REM**********************************
50 REM*                                 *
60 REM*   Program Name: NCS             *
70 REM*   Revision:     For 16-Bit      *
80 REM*   Date :        January 1984    *
90 REM*   Recoded By:   Deborah Jackson*
100 REM*                                *
110 REM**********************************
120 N$="LOGO"
130 CLS
140 GOSUB 1460
150 TES=1
160 LOCATE 1,13
170 PRINT"Current Time ";TIME$
180 LOCATE 1,40
190 PRINT"Today's Date ";DATE$
210 INPUT"ENTER CODE";R$
220 IF R$="T" GOTO 160
230 IF R$="9" GOTO 250
240 GOTO 210
250 PAD$="           Main  Menu                "
260 GOSUB 650
270 TES=0
280 GOSUB 580
290 REM*************************************************
```

```
300 PRINT
310 PRINT"  1. P.O.C. Lists                        "
320 PRINT"  2. Emergency Activation Procedures     "
330 PRINT"  3. Network Status Monitoring           "
340 PRINT"  4. Damage Assessment                   "
350 PRINT"  5. Resolution of Claim                 "
360 PRINT"  6. Zooming                             "
370 PRINT"  7. Word Processing (WordStar)          "
380 PRINT"  8. NSC Processing Module               "
390 PRINT"  9. QUIT                                "
400 COLOR 14,0,0:PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM*************************************************************
660 REM*                                                           *
670 REM*   This Subroutine produces the logo box for the menus.    *
680 REM*                                                           *
690 REM*************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
```

```
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ**************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
```

```
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM***********FILE PLOT***************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
```

```
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
2000 LINE (X,Y-2)-(X+4,Y+2):LINE -(X-4,Y-1):LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10):LINE -(X+20,Y):LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y):LINE -(X+6,Y-6):LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
```

```
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
```

```
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
```

```
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
3410 SHELL "WS
3420 CLS
3430 GOTO 250
```

Appendix B

NCSCLAIM.BAS Listing

```
01 COMMON DRV$
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C: LASTFILE$=" "
35 GOTO 4000
250 PAD$="           Main  Menu                "
260 GOSUB 650
270 TES=0
280 GOSUB 580
290 REM*****************************************************
300 PRINT
310 PRINT"  1. P.O.C. Lists                          "
320 PRINT"  2. Emergency Activation Procedures       "
330 PRINT"  3. Network Status Monitoring             "
340 PRINT"  4. Damage Assessment                     "
350 PRINT"  5. Resolution of Claim                   "
360 PRINT"  6. Zooming                               "
370 PRINT"  7. Word Processing (WordStar)            "
380 PRINT"  8. NSC Processing Module                 "
390 PRINT"  9. QUIT                                  "
400 COLOR 14,0,0: PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
```

```
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM************************************************************
660 REM*                                                          *
670 REM*   This Subroutine produces the logo box for the menus.   *
680 REM*                                                          *
690 REM************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
```

```
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ*************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM************FILE PLOT***************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
```

```
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
```

```
2000 LINE (X,Y-2)-(X+4,Y+2):LINE -(X-4,Y-1):LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10):LINE -(X+20,Y):LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y):LINE -(X+6,Y-6):LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
```

```
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
```

```
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
```

```
3410 SHELL "WS
3420 CLS
3430 GOTO 250
4000 REM ******************************************************
4010 PAD$="          RESOLUTION OF CLAIM          "
4020 GOSUB 650
4030 TES=0
4040 GOSUB 580
4050 PRINT
4060 PRINT"  1. Entry of Claim Record              "
4070 PRINT"  2. Review Claim Status File           "
4080 PRINT"  3. Claim Resolution                   "
4090 PRINT"  4. QUIT                               "
4100 PRINT
4110 COLOR 14,0,0: INPUT"      ENTER OPTION DESIRED ";T
4120 CLS
4130 IF T=1 THEN GOSUB 1040
4140 IF T=2 THEN GOSUB 1040
4150 IF T=3 THEN GOSUB 1040
4160 IF T=4 THEN 250
4170 GOTO 4010
```

Appendix C

NCSSTAT.BAS Listing

```
01 COMMON DRV$
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C: LASTFILE$=" "
35 GOTO 4000
250 PAD$="           Main  Menu                "
260 GOSUB 650
270 TES=0
280 GOSUB 580
290 REM*************************************************
300 PRINT
310 PRINT"  1. P.O.C. Lists                        "
320 PRINT"  2. Emergency Activation Procedures     "
330 PRINT"  3. Network Status Monitoring           "
340 PRINT"  4. Damage Assessment                   "
350 PRINT"  5. Resolution of Claim                 "
360 PRINT"  6. Zooming                             "
370 PRINT"  7. Word Processing (WordStar)          "
380 PRINT"  8. NSC Processing Module               "
390 PRINT"  9. QUIT                                "
400 COLOR 14,0,0: PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
```

```
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM************************************************************
660 REM*                                                          *
670 REM*   This Subroutine produces the logo box for the menus.   *
680 REM*                                                          *
690 REM************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
```

```
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ*************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM************FILE PLOT***************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
```

```
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
```

```
2000 LINE (X,Y-2)-(X+4,Y+2): LINE -(X-4,Y-1): LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10): LINE -(X+20,Y): LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y): LINE -(X+6,Y-6): LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
```

```
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
```

```
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
```

```
3410 SHELL "WS
3420 CLS
3430 GOTO 250
4000 REM ************************************************************
4010 PAD$="      Network Status Monitoring     "
4020 GOSUB 650
4030 TES=0
4040 GOSUB 580
4050 PRINT
4060 PRINT "            SYSTEMS AVAILABLE           "
4070 PRINT "                                        "
4080 PRINT "     1. DOD                             "
4090 PRINT "     2. GSA                             "
4100 PRINT "     3. FAA                             "
4110 PRINT "     4. FEMA                            "
4120 PRINT "     5. NASA                            "
4130 PRINT "     6. COMMERCIAL COMM.                "
4140 PRINT "     7. CRITICAL COMM. FACILITIES       "
4150 PRINT "     8. QUIT                            "
4160 PRINT
4170 COLOR 14,0,0:PRINT "    ENTER OPTION DESIRED ";
4180 INPUT T
4190 PRINT
4200 CLS
4210 IF T = 2 THEN GOTO 10220
4220 IF T = 4 THEN GOTO 10950
4230 IF T = 8 THEN 250
4240 IF T = 5 THEN GOTO 9270
4250 IF T = 1 THEN GOTO 6190
4260 IF DRV$>"B:" THEN 4280
4265 PRINT "ENTER DISC NO. S-17 IN THE"
4270 INPUT "B-DRIVE AND ENTER RETURN";D$
4280 RESET
4290 WIDTH 80
4300 IF T = 3 THEN GOTO 10630
4310 IF T = 6 THEN GOTO 13650
4320 IF T = 7 THEN GOTO 14260
4330 GOTO 4000
4340 WIDTH 40
4350 PRINT
4360 PRINT
4370 PRINT "  THE ";ST$;" SYSTEM CAN BE DISPLAYED"
4380 PRINT
4390 PRINT "            1. AT THE US LEVEL"
4400 PRINT "            2. BY FEMA REGION"
4410 PRINT
4420 PRINT "  ENTER OPTION DESIRED:";
```

```
4430 INPUT AN$
4440 PRINT
4450 K=0
4460 IF AN$="2" THEN INPUT "  WHICH REGION (1-10)";A
4470 IF AN$="1" THEN A=0
4480 IF A = 0 THEN N$="USAOUT.TXT"
4490 IF A = 1 THEN N$=DRV$ + "CRITR1"
4500 IF A = 2 THEN N$=DRV$ + "CRITR2"
4510 IF A = 3 THEN N$=DRV$ + "CRITR3"
4520 IF A = 4 THEN N$=DRV$ + "CRITR4"
4530 IF A = 5 THEN N$=DRV$ + "CRITR5"
4540 IF A = 6 THEN N$=DRV$ + "CRITR6"
4550 IF A = 7 THEN N$=DRV$ + "CRITR7"
4560 IF A = 8 THEN N$=DRV$ + "CRITR8"
4570 IF A = 9 THEN N$=DRV$ + "CRITR9"
4580 IF A = 10 THEN N$=DRV$ + "CRITR10"
4590 CLS
4600 PRINT "STAND BY SYSTEM PROCESSING"
4610 IF A > 0 THEN 5140
4620 K=1
4630 OPEN "I",#1,F$
4640 OPEN "O",2,DRV$ + "TEMPNOD"
4650 IF EOF(1) THEN GOTO 4900
4660 INPUT #1,ROW,COL,A$,X1,Y1,X2,Y2,STAT,TYP$,NODE
4670 IF STAT=30 OR STAT=31 THEN 4830
4680 IF STAT=20 OR STAT=21 THEN 4870
4690 IF ST$="CRITICAL" THEN TYP$="ALL"
4700 IF TYP$=CAT1$ THEN PRINT #2,16;","X1;","Y1;","0;","0;","0
4710 IF TYP$=CAT2$ THEN PRINT #2,11;","X1;","Y1;","0;","0;","0
4720 IF TYP$=CAT3$ THEN  PRINT #2,0;","X1;","Y1;","0;","0;","0
4730 IF TYP$="SATE" THEN PRINT #2,10;","X1;","Y1;","0;","0;","0
4740 IF TYP$=CAT4$ THEN PRINT #2,9;","X1;","Y1;","0;","0;","0
4750 IF TYP$=CAT4$ THEN PRINT #2,2;","X1;","Y1;","10;","0;","6.28
4760 IF TYP$=CAT5$ THEN PRINT #2,9;","X1;","Y1;","0;","0;","0
4770 IF TYP$=CAT6$ THEN PRINT #2,20;","X1;","Y1;","0;","0;","0
4780 IF TYP$=CAT7$ THEN PRINT #2,22;","X1;","Y1;","0;","0;","0
4790 IF TYP$=CAT8$ THEN PRINT #2,21;","X1;","Y1;","0;","0;","0
4800 IF TYP$=CAT9$ THEN PRINT #2,8;","X1;","Y1;","0;","0;","0
4810 IF TYP$=CAT10$ THEN PRINT #2,13;","X1;","Y1;","0;","0;","0
4820 GOTO 4650
4830 PRINT #2,6;","X1-6;","Y1-3;","0;","0;","0
4840 PRINT #2,15;","X1+6;","Y1+3;","0;","0;","0
4850 PRINT #2,14;","X1+3;","Y1+1;","0;","0;","0
4860 GOTO 4650
4870 PRINT #2,0;","X1;","Y1;","0;","0;","6.28
4880 PRINT #2,2;","X1;","Y1;","6;","0;","6.28
4890 GOTO 4650
```

```
4900 CLOSE
4910 IF A > 0 THEN 5140
4920 IF ST$ = "FTS" OR ST$="AUTOVON" THEN 5020
4930 IF ST$ = "MEECN" OR ST$ = "CRITICAL" THEN 5020
4940 OPEN "I",#1,E$
4950 OPEN "O",#2,DRV$ + "TEMPLIN"
4960 IF EOF(1) THEN GOTO 5010
4970 INPUT #1,CODE1,CODE2,XU1,YU1,XU2,YU2,XR1,YR1,XR2,YR2
4980 PRINT #2,0;","XU1;","YU1;","0;","0;","0
4990 PRINT #2,1;","XU2;","YU2;","0;","0;","0
5000 GOTO 4960
5010 CLOSE
5020 CLS
5030 GOSUB 1460
5040 N$=DRV$ + "TEMPNOD"
5050 GOSUB 1460
5060 KILL DRV$ + "TEMPNOD"
5070 IF ST$ = "FTS" OR ST$="AUTOVON" THEN 5760
5080 IF ST$ = "MEECN" OR ST$ = "CRITICAL" THEN 5760
5090 N$=DRV$ + "TEMPLIN"
5100 GOSUB 1460
5110 KILL DRV$ + "TEMPLIN"
5120 GOTO 5760
5130 K=0
5140 OPEN "I",#1,F$
5150 OPEN "O",#2,DRV$ + "RNODE"
5160 IF EOF(1) THEN GOTO 5470
5170 INPUT #1,ROW,COL,A$,X1,Y1,X2,Y2,STAT,TYP$,NODE
5180 N=NODE-INT(NODE/100)*100
5190 IF N=11 THEN N=10
5200 IF N=22 THEN N=2
5210 IF N=99 THEN N=9
5220 IF N <> A THEN 5160
5230 IF STAT=30 OR STAT=31 THEN 5390
5240 IF STAT=20 OR STAT=21 THEN 5430
5250 IF ST$="CRITICAL" THEN TYP$="ALL"
5260 IF TYP$ = CAT1$ THEN PRINT #2,17;","X2;","Y2;","0;","0;","0
5270 IF TYP$ = CAT2$ THEN PRINT #2,19;","X2;","Y2;","0;","0;","0
5280 IF TYP$ = CAT3$ THEN PRINT #2,18;","X2;","Y2;","0;","0;","0
5290 IF TYP$ = "SATE" THEN PRINT #2,10;","X2;","Y2;","0;","0;","0
5300 IF TYP$ = CAT4$ THEN PRINT #2,9;","X2;","Y2;","0;","0;","0
5310 IF TYP$ = CAT4$ THEN PRINT #2,2;","X2;","Y2;","10;","0;","6.28
5320 IF TYP$ = CAT5$ THEN PRINT #2,9;","X2;","Y2;","0;","0;","0
5330 IF TYP$ = CAT6$ THEN PRINT #2,20;","X2;","Y2;","0;","0;","0
5340 IF TYP$ = CAT7$ THEN PRINT #2,22;","X2;","Y2;","0;","0;","0
5350 IF TYP$ = CAT8$ THEN PRINT #2,21;","X2;","Y2;","0;","0;","0
5360 IF TYP$ = CAT9$ THEN PRINT #2,8;","X2;","Y2;","0;","0;","0
```

```
5370 IF TYP$ = CAT10$ THEN PRINT #2,13;","X2;","Y2;","0;","0;","0
5380 GOTO 5450
5390 PRINT #2,6;","X2-8;","Y2-4;","0;","0;","0
5400 PRINT #2,15;","X2+8;","Y2+4;","0;","0;","0
5410 PRINT #2,14;","X2+4;","Y2+2;","0;","0;","0
5420 GOTO 5450
5430 PRINT #2,0;","X2;","Y2;","0;","0;","0
5440 PRINT #2,2;","X2;","Y2;","8;","0;","6.28
5450 K=1
5460 GOTO 5160
5470 CLOSE
5480 IF ST$="AUTOVON" OR ST$="CRITICAL" THEN 5670
5490 OPEN "I",#1,E$
5500 OPEN "O",#2,DRV$ + "RLINK"
5510 IF EOF(1) THEN GOTO 5660
5520 INPUT #1,CODE1,CODE2,XU1,YU1,XU2,YU2,XR1,YR1,XR2,YR2
5530 N1 = CODE1-INT(CODE1/100)*100
5540 IF N1 = 22 THEN N1 = 2
5550 IF N1 = 99 THEN N1 = 9
5560 IF N1 = 11 THEN N1 = 10
5570 N2 = CODE2-INT(CODE2/100)*100
5580 IF N2 = 22 THEN N2 = 2
5590 IF N2 = 99 THEN N2 = 9
5600 IF N2 = 11 THEN N2 = 10
5610 IF N1 <> N2 THEN 5510
5620 IF N1 <> A AND N2 <> A THEN 5510
5630 PRINT #2,0;","XR1;","YR1;","0;","0;","0
5640 PRINT #2,1;","XR2;","YR2;","0;","0;","0
5650 GOTO 5510
5660 CLOSE
5670 CLS
5680 GOSUB 1460
5690 N$ = DRV$ + "RNODE"
5700 GOSUB 1460
5710 KILL DRV$ + "RNODE"
5720 IF ST$="AUTOVON" OR ST$="CRITICAL" THEN 5760
5730 N$ = DRV$ + "RLINK"
5740 GOSUB 1460
5750 KILL DRV$ + "RLINK"
5760 OPEN "I",#1,H$
5770 OPEN "O",#2,DRV$ + "LEGTEMP"
5780 IF EOF(1) THEN GOTO 5870
5790 INPUT #1,SY$,RN,XPT,YPT,CD,RAD
5800 IF SY$ < > ST$ THEN 5780
5810 IF RN < > A THEN 5780
5820 IF CD=2 THEN 5850 ELSE 5830
5830 PRINT #2,CD;","XPT;","YPT;","RAD;","0;","0
```

```
5840 GOTO 5860
5850 PRINT #2,CD;","XPT;","YPT;","RAD;","0;","6.28
5860 GOTO 5780
5870 CLOSE
5880 N$=DRV$ + "LEGTEMP"
5890 GOSUB 1460
5900 OPEN "I",#1,G$
5910 IF EOF(1) THEN GOTO 5980
5920 INPUT #1,ROW,COL,A$,R
5930 IF R < > 77 THEN 5950
5940 LOCATE ROW,COL: PRINT A$
5950 IF R < > A THEN 5910
5960 LOCATE ROW,COL: PRINT A$
5970 GOTO 5910
5980 CLOSE
5990 KILL DRV$ + "LEGTEMP"
6000 IF K=1 THEN 6030
6010 LOCATE 23,1
6020 PRINT "THERE ARE NO SWITCHES IN THIS REGION."
6030 IF ST$="MEECN" THEN RETURN
6040 LOCATE 24,1
6050 IF ST$="DSCS" THEN INPUT "PRESS RETURN WHEN READY  ";P$
6060 IF ST$="DSCS" THEN RETURN
6070 INPUT "ENTER R FOR ANOTHER REGION OR US LEVEL, Q TO QUIT";OPT$
6080 IF OPT$="R" THEN SCREEN 0: COLOR 14,0,0
6090 IF OPT$="R" THEN GOTO 4340
6100 SCREEN 0: COLOR 14,0,0
6110 PRINT
6120 INPUT "DO YOU WISH TO SEE A LISTING OF THIS SYSTEM? <Y>ES OR <N>O";AS$
6130 IF AS$="N" THEN RETURN
6140 PRINT
6150 INPUT "ENTER S FOR ON SCREEN, P FOR ON PAPER";ANS$
6160 GOSUB 14540
6170 RETURN
6180 END
6190 REM ******************************************************
6200 PAD$="       Department of Defense        "
6210 GOSUB 650
6220 TES=0
6230 GOSUB 580
6240 PRINT
6250 PRINT "     DOD SYSTEMS AVAILABLE            "
6260 PRINT "  1. AUTODIN                          "
6270 PRINT "  2. AUTOVON                          "
6280 PRINT "  3. AUTOSEVOCOM                      "
6290 PRINT "  4. Hot-Line                         "
6300 PRINT "  5. MEECN                            "
```

```
6310 PRINT "  6. Washington Area Wideband System  "
6320 PRINT "  7. DSCS                             "
6330 PRINT "  8. JCSAN                            "
6340 PRINT "  9. QUIT                             "
6350 PRINT: :PRINT " ENTER OPTION DESIRED ";
6360 INPUT T
6370 PRINT
6380 CLS
6390 PRINT
6400 IF T = 9  THEN 4000
6410 IF DRV$>"B:" THEN 6430
6415 PRINT "ENTER DISC NO. 18 IN THE"
6420 INPUT "B-DRIVE AND ENTER RETURN";A$
6430 RESET
6440 IF T = 1 THEN GOSUB 7420
6450 IF T = 2 THEN GOSUB 7510
6460 IF T = 3 THEN GOSUB 1040
6470 IF T = 4 THEN 6530
6480 IF T = 5 THEN 7650
6490 IF T = 6 THEN 9140
6500 IF T = 7 THEN 9030
6510 IF T = 8 THEN 8760
6520 GOTO 6200
6530 REM ***********************************************
6540 WIDTH 80:CLS:SCREEN 0:COLOR 14,0,0
6550 PRINT
6560 PRINT
6570 PRINT "                WASHINGTON-TO-MOSCOW HOTLINE"
6580 PRINT
6590 PRINT "The Washington-to-Moscow Hotline is routed over cable and Satellite"
6600 PRINT
6610 PRINT "Select one of the options below:"
6620 PRINT
6630 PRINT "        1. CABLE        2. SATELLITE        3. DCL CONFIGURATION"
6640 PRINT "        4. CONCEPT OF OPERATIONS            5. QUIT"
6650 PRINT
6660 PRINT
6670 INPUT "OPTION: ";C
6680 IF C=5 THEN GOTO 6200
6690  IF C=2 THEN 7340
6700 IF C=1 THEN GOTO 6760
6710 IF C=3 THEN X$=DRV$ + "DCLCON"
6720 IF C=4 THEN X$=DRV$ + "DCLOPS"
6730 IF C=4 OR C=3 THEN SET=0
6740 IF C=4 OR C=3 THEN GOSUB 1090
6750 GOTO 6540
6760 CLS
```

```
6770 N$=DRV$ + "ADCL1"
6780 CLS
6790 GOSUB 1460
6800 S$=DRV$ + "ADCL1S"
6810 GOSUB 6830
6820 GOTO 6900
6830 OPEN "I", #1,S$
6840 IF EOF(1) THEN GOTO 6880
6850 INPUT #1, ROW,COL,A$
6860 LOCATE ROW,COL: PRINT A$
6870 GOTO 6840
6880 CLOSE
6890 RETURN
6900 INPUT "ENTER D FOR NARRATIVE DATA, N FOR NEXT ROUTE, OR R TO RETURN";B$
6910 IF B$="N" THEN GOTO 6980
6920 IF B$="D" THEN GOTO 6940
6930 GOTO 6540
6940 X$=DRV$ + "HOTLINE1"
6950 SET=0
6960 GOSUB 1090
6970 GOTO 6540
6980 SCREEN 0: COLOR 14,0,0
6990 N$=DRV$ + "ADCL2"
7000 CLS
7010 GOSUB 1460
7020 S$=DRV$ + "ADCL2S"
7030 GOSUB 6830
7040 INPUT "ENTER D FOR  NARRATIVE DATA, N FOR NEXT ROUTE,  R FOR RETURN ";B$
7050 IF B$="N" THEN GOTO 7120
7060 IF B$="D" THEN GOTO 7080
7070 GOTO 6540
7080 X$=DRV$ + "HOTLINE2"
7090 SET=0
7100 GOSUB 1090
7110 GOTO 6540
7120 SCREEN 0: COLOR 14,0,0
7130 N$=DRV$ + "ADCL3"
7140 CLS
7150 GOSUB 1460
7160 S$=DRV$ + "ADCL3S"
7170 GOSUB 6830
7180 INPUT "ENTER D FOR NARRATIVE DATA, N FOR NEXT ROUTE, R FOR RETURN ";B$
7190 IF B$="N" THEN GOTO 7260
7200 IF B$="D" THEN GOTO 7220
7210 GOTO 6540
7220 X$=DRV$ + "HOTLINE3"
7230 SET=0
```

```
7240 GOSUB 1090
7250 GOTO 6540
7260 SCREEN 0:COLOR 14,0,0
7270 N$=DRV$ + "ADCL4"
7280 CLS
7290 GOSUB 1460
7300 S$=DRV$ + "ADCL4S"
7310 GOSUB 6830
7320 INPUT " PRESS RETURN WHEN READY ";B$
7330 GOTO 6540
7340 CLS
7350 N$=DRV$ + "ADCL5"
7360 CLS
7370 GOSUB 1460
7380 S$=DRV$ + "ADCL5S"
7390 GOSUB 6830
7400 INPUT " PRESS RETURN WHEN READY ";B$
7410 GOTO 6540
7420 CLS
7430 E$=DRV$ + "DINLINK"
7440 F$=DRV$ + "DINNODE"
7450 CAT2$="ADIN"
7460 ST$="AUTODIN"
7470 H$=DRV$ + "DLEGEND"
7480 G$=DRV$ + "DINNAR"
7490 GOSUB 4340
7500 GOTO 6190
7510 CLS
7520 F$=DRV$ + "VONNODE"
7530 G$=DRV$ + "VONNAR"
7540 H$=DRV$ + "DLEGEND"
7550 ST$="AUTOVON"
7560 CAT1$="B4W5"
7570 CAT2$="BESS"
7580 CAT4$="CBES"
7590 CAT5$="CAEC"
7600 CAT6$="IAEC"
7610 CAT7$="IDMS"
7620 CAT8$="BDMS"
7630 GOSUB 4340
7640 GOTO 6190
7650 CLS:WIDTH 80
7660 PRINT
7670 PRINT
7680 PRINT "       THE MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK"
7690 PRINT "                          System Description "
7700 PRINT
```

```
7710 PRINT
7720 PRINT "     The MEECN systems are those communication systems specifically"
7730 PRINT "designed to survive and provide a communications capability
       throughout"
7740 PRINT "a transattack environment.
7750 PRINT
7760 PRINT "     The MEECN Supporting Systems are expected to provide some
       degree"
7770 PRINT "of survivability in a transattack and postattack nuclear
       environment"
7780 PRINT "and can significantly enhance the probability that JCS messages
       will be"
7790 PRINT "delivered to the forces in a precise and timely manner.  They are""
7800 PRINT "comprised of voice and record special-purpose and common-user com-"
7810 PRINT "munication networks and systems of the Defense Communications
       System"
7820 PRINT "(DCS), the Unified and Specified Commands, and the Military
       Services."
7830 PRINT "For the most part, they are fixed ground-based systems which
       employ a"
7840 PRINT "mixture of wireline and radio-frequency (RF) transmission media."
7850 PRINT
7860 INPUT "PRESS RETURN WHEN READY   ",A$
7870 CLS
7880 PRINT "                                MEECN SYSTEMS"
7890 PRINT
7900 PRINT
7910 PRINT
7920 PRINT "                          Current MEECN Systems (1983)"
7930 PRINT
7940 PRINT
7950 PRINT "                   Survivable VLF/LF Transmission Systems"
7960 PRINT "                   WWABNCP HF System"
7970 PRINT "                   WWABNCP UHF System"
7980 PRINT "                   Emergency Rocket Communication System (ERCS)"
7990 PRINT "                   AFSATCOM"
8000 PRINT
8010 PRINT
8020 PRINT "                     Next-Generation Improvements (1984-1985)"
8030 PRINT
8040 PRINT
8050 PRINT "                   VLF/LF Transmission Systems Upgrade"
8060 PRINT "                   AFSATCOM Upgrades"
8070 PRINT "                   WWABNCP HF Equipment Upgrade"
8080 PRINT
8090 INPUT "PRESS RETURN WHEN READY   ",C$
8100 CLS: SCREEN 0: COLOR 14,0,0
```

```
8110 PRINT
8120 PRINT
8130 PRINT
8140 PRINT "Select one of the following options below:"
8150 PRINT
8160 PRINT "        1. WWABNCP UHF Network    "
8170 PRINT "        2. WWABNCP HF Network Members and Authorized Users"
8180 PRINT "        3. WWABNCP HF Network Configuration, NEACP NCS"
8190 PRINT "        4. WWABNCP HF Network Configuration, SAC ABNCP NCS"
8200 PRINT "        5. HF AUTODIN Access Stations"
8210 PRINT "        6. QUIT "
8220 PRINT
8230 PRINT
8240 INPUT "OPTION: ";Q
8250 IF Q = 6 THEN 6200
8260 IF Q = 1 THEN 8320
8270 IF Q = 2 THEN 8440
8280 IF Q = 3 THEN 8480
8290 IF Q = 4 THEN 8600
8300 IF Q = 5 THEN 8720
8310 GOTO 7650
8320 CLS
8330 F$=DRV$ + "MEENODE"
8340 G$=DRV$ + "MEENAR"
8350 H$=DRV$ + "DLEGEND"
8360 ST$="MEECN"
8370 CAT1$="CC"
8380 CAT2$="BTWCP"
8390 CAT5$="GEP"
8400 CAT7$="LCCW"
8410 A = 0
8420 GOSUB 4480
8430 GOTO 8090
8440 X$=DRV$ + "MEECMEM.TXT"
8450 SET = 0
8460 GOSUB 1090
8470 GOTO 8100
8480 CLS
8490 N$=DRV$ + "HFSITE1"
8500 GOSUB 1460
8510 OPEN "I",#1,DRV$ + "HFNAR1"
8520 IF EOF(1) THEN 8560
8530 INPUT #1,ROW,COL,A$
8540 LOCATE ROW,COL:PRINT A$
8550 GOTO 8520
8560 CLOSE
8570 LOCATE 24,1
```

```
8580 INPUT "PRESS RETURN WHEN READY   ",T$
8590 GOTO 8100
8600 CLS
8610 N$=DRV$ + "HFSITE2"
8620 GOSUB 1460
8630 OPEN "I",#1,DRV$ + "HFNAR2"
8640 IF EOF(1) THEN 8680
8650 INPUT #1,ROW,COL,A$
8660 LOCATE ROW,COL: PRINT A$
8670 GOTO 3640
8680 CLOSE
8690 LOCATE 24,1
8700 INPUT "PRESS RETURN WHEN READY   ",Y$
8710 GOTO 8100
8720 CLS
8730 X$=DRV$ + "HFDIN.TXT"
8740 GOSUB 1090
8750 GOTO 8100
8760 N$ = DRV$ + "JCSAN"
8770 GOSUB 1460
8780 OPEN "I",#1,DRV$ + "JCNAR"
8790 IF EOF(1) THEN GOTO 8830
8800 INPUT #1, ROW,COL, S$
8810 LOCATE ROW,COL: PRINT S$
8820 GOTO 8790
8830 CLOSE
8840 LOCATE 24,1: INPUT"DO YOU WISH TO SEE A LISTING OF CENTERS"; C$
8850 IF C$ = "N" THEN 6190
8860 CLS
8870 PRINT "COMMUNICATION CENTERS          PRIMARY LINES          SECONDARY
           LINES"
8880 OPEN "I",#1,DRV$ + "JCNAR1"
8890 I = 0
8900 IF I = 12 THEN 8950
8910 INPUT #1, C$,D$,E$
8920 PRINT C$;"                        "D$;"                  "E$
8930 I = I + 1
8940 GOTO 8900
8950 PRINT: PRINT "REMOTE CONTROL CENTERS"
8960 IF EOF(1) THEN 9000
8970 INPUT #1,A$,AA$
8980 PRINT A$;"     "AA$
8990 GOTO 8960
9000 CLOSE
9010 LOCATE 24,1: INPUT"PRESS RETURN WHEN READY"; C$
9020 GOTO 6190
9030 CLS
```

```
9040 F$=DRV$ + "DSCSNODE"
9050 E$=DRV$ + "DSCSLINK"
9060 G$=DRV$ + "DSCSNAR"
9070 H$=DRV$ + "DLEGEND"
9080 ST$="DSCS"
9090 CAT9$="ESAT"
9100 CAT2$="TERM"
9110 A = 0
9120 GOSUB 4480
9130 GOTO 6190
9140 CLS
9150 N$=DRV$ + "WAWSITE"
9160 GOSUB 1460
9170 OPEN "I",#1,DRV$ + "WAWSNAR"
9180 IF EOF(1) THEN 9220
9190 INPUT #1,ROW,COL,A$
9200 LOCATE ROW,COL: PRINT A$
9210 GOTO 9180
9220 CLOSE
9230 LOCATE 24,1
9240 INPUT "PRESS RETURN WHEN READY  "; S$
9250 GOTO 6190
9260 END
9270 REM************ NASA COMMUNICATIONS SYSTEM ******************
9280 CLS: WIDTH 80
9290 PRINT
9300 PRINT TAB(15)"            NASA COMMUNICATIONS NETWORK                "
9310 PRINT TAB(15)"                    (NASCOM)                           "
9320 PRINT
9330 PRINT TAB(10)"     The NASCOM network is a global point-to-point ground"
9340 PRINT TAB(10)"communications system developed to support manned space  "
9350 PRINT TAB(10)"flight and unmanned scientific satellite missions of the "
9360 PRINT TAB(10)"National Aeronautics and Space Administration (NASA) OF the"
9370 PRINT TAB(10)"United States of America.                               "
9380 PRINT
9390 INPUT "PRESS RETURN WHEN READY"; W$: PRINT
9400 CLS: PRINT
9410 PRINT TAB(10) "     Terrestrial-based Spaceflight Tracking and Data"
9420 PRINT TAB(10) "Acquisition Network (STDAN) stations and the single "
9430 PRINT TAB(10) "ground station facility at White Sands Missle Range "
9440 PRINT TAB(10) "(WSMR), New Mexico, which operates with NASA'S Track-"
9450 PRINT TAB(10) "ing and Data Relay Satellite System (TDRSS)--geostational"
9460 PRINT TAB(10) "orbit-based tracking satellites at 179 degrees west, 79"
9470 PRINT TAB(10)"degrees west, and 41 degrees west longitude respectively--"
9480 PRINT TAB(10)"are interconnected by leased long-line communications cir-"
9490 PRINT TAB(10)"cuits (NASCOM) using a combination of satellites (INTELSAT/"
9500 PRINT TAB(10)"DOMSAT), submarine cables, landline cables, and wideband "
```

```
9510 PRINT TAB(10)"radio microwave systems.                                    "
9520 PRINT TAB(10)"     The hub of this system is the telemetry
                   (ANALOG/DIGITAL)"
9530 PRINT TAB(10)"information switching computer and other conferencing, mon-"
9540 PRINT TAB(10)"itoring,and patching facilities at the acilities at the "
9550 PRINT TAB(10)"Goddard Space Flight Center (GSFC) at Greenbelt, Md."
9560 PRINT
9570 INPUT "RETURN WHEN READY   ",A$
9580 CLS
9590 PRINT "                     (NASCOM)       "
9600 PRINT
9610 PRINT
9620 PRINT "         SELECT ONE OF THE FOUR OPTIONS BELOW:    "
9630 PRINT
9640 PRINT "         1. NASCOM TRUNKING NETWORK   "
9650 PRINT "         2. LISTING OF LEASED COMMERCIAL SATELLITE EARTH "
9660 PRINT "            STATIONS SUPPORTING NASCOM     "
9670 PRINT "         3. LISTING OF COMMERCIAL SATELLITES TRANSPORTING "
9680 PRINT "            NASCOM CIRCUITS                                    "
9690 PRINT "         4. DOMSAT SATCOM BROADCAST SYSTEM FOR TDRSS     "
9700 PRINT "         5. STDAN,NASCOM,AND TDRSS NETWORKS"
9710 PRINT "         6. QUIT                              "
9720 PRINT:PRINT
9730 INPUT "OPTION:  ";Q
9740 CLS:PRINT:PRINT
9750 IF Q = 6 THEN GOTO 4000
9760 IF DRV$>"B:" THEN 9770
9765 INPUT "ENTER DISK 18 INTO THE B-DRIVE AND PRESS RETURN";E$
9770 CLS
9780 IF Q = 1 THEN 9840
9790 IF Q = 2 THEN 9930
9800 IF Q = 3 THEN 9960
9810 IF Q = 4 THEN 9990
9820 IF Q = 5 THEN 10110
9830 GOTO 9580
9840 CLS
9850 N$=DRV$ + "TRUNKSITE"
9860 GOSUB 1460
9870 S$=DRV$ + "TRUNKNAR"
9880 GOSUB 13180
9890 LOCATE 24,1:PRINT "PRESS RETURN WHEN READY";
9900 INPUT G$
9910 GOTO 9580
9920 GOTO 9580
9930 X$ = DRV$ + "NASANAR"
9940 GOSUB 1090
9950 GOTO 9580
```

```
9960 X$ = DRV$ + "NASA2NAR"
9970 GOSUB 1090
9980 GOTO 9580
9990 N$=DRV$ + "NASASITE"
10000 CLS
10010 GOSUB 1460
10020 OPEN "I",#1,DRV$ + "NASA3NAR"
10030 IF EOF(1) THEN 10070
10040 INPUT #1,ROW,COL,A1$
10050 LOCATE ROW,COL: PRINT A1$
10060 GOTO 10030
10070 CLOSE
10080 LOCATE 24,1
10090 INPUT "PRESS RETURN WHEN READY"; S$
10100 GOTO 9580
10110 N$=DRV$ + "TRACSIT"
10120 GOSUB 1460
10130 OPEN "I",#1,DRV$ + "TRACNAR"
10140 IF EOF(1) THEN 10190
10150 INPUT #1,ROW,COL,A1$
10160 LOCATE ROW,COL: PRINT A1$
10170 GOTO 10140
10180 LOCATE 24,1: INPUT"PRESS RETURN WHEN READY"; A$
10190 CLOSE
10200 LOCATE 24,1: INPUT"PRESS RETURN WHEN READY"; A$
10210 GOTO 9580
10220 REM ************************************************************
10230 PAD$="          G S A Systems              "
10240 GOSUB 650
10250 TES=0
10260 GOSUB 580
10270 PRINT
10280 PRINT "       GSA SYSTEMS AVAILABLE          "
10290 PRINT "                                      "
10300 PRINT "  1. Federal Telephone System         "
10310 PRINT "                                      "
10320 PRINT "  2. FTS Matrix                       "
10330 PRINT "                                      "
10340 PRINT "  3. QUIT                             "
10350 PRINT
10360 COLOR 14,0,0: PRINT " ENTER OPTION DESIRED ";
10370 INPUT T
10380 PRINT
10390 CLS
10400 IF T = 3 THEN 4000
10410 IF DRV$>"B:" THEN 10430
10415 PRINT " ENTER DISC NO. S-17 IN THE"
```

```
10420 INPUT " B-DRIVE AND ENTER RETURN";D$
10430 WIDTH 80
10440 IF T = 1 THEN 10470
10450 IF T = 2 THEN 10580
10460 GOTO 10220
10470 F$=DRV$ + "FTSNODE"
10480 G$=DRV$ + "FTSNAR"
10490 H$=DRV$ + "LEGEND"
10500 E$=DRV$ + "FTSLINK"
10510 ST$="FTS"
10520 CAT1$="SS-2"
10530 CAT2$="SS-1"
10540 CAT3$="SS-3"
10550 CLS
10560 GOSUB 4340
10570 GOTO 10230
10580 CLS
10590 X$=DRV$ + "GSANAME.TXT"
10600 SET=0
10610 GOSUB 1090
10620 GOTO 10230
10630 REM ************************************************
10640 PAD$="           F A A Systems            "
10650 GOSUB 650
10660 TES=0
10670 GOSUB 580
10680 PRINT
10690 PRINT "       FAA SYSTEMS AVAILABLE          "
10700 PRINT "                                      "
10710 PRINT "    1. FAA HF RADIO SYSTEM            "
10720 PRINT "                                      "
10730 PRINT "    2. QUIT                           "
10740 PRINT
10750 COLOR 14,0,0:PRINT " ENTER OPTION DESIRED ";
10760 INPUT T
10770 PRINT
10780 CLS
10790 IF T = 1 THEN 10820
10800 IF T = 2 THEN 4000
10810 GOTO 10640
10820 F$=DRV$ + "FAANODE"
10830 E$=DRV$ + "FAALINK"
10840 G$=DRV$ + "FAANAR"
10850 H$=DRV$ + "LEGEND"
10860 ST$="FAA"
10870 CAT1$="REGO"
10880 CAT2$="NAFEC"
```

```
10890 CAT5$="ARTCC"
10900 CAT8$="BACK"
10910 CLS
10920 GOSUB 4340
10930 GOTO 10630
10940 END
10950 REM ************************************************
10960 PAD$="             FEMA Systems             "
10970 GOSUB 650
10980 TES=0
10990 GOSUB 580
11000 PRINT
11010 PRINT "          FEMA SYSTEMS AVAILABLE       "
11020 PRINT "                                       "
11030 PRINT "  1. Emergency Broadcast System (EBS) "
11040 PRINT "  2. FEMA Regional Maps                "
11050 PRINT "  3. FEMA National Teletype System     "
11060 PRINT "  4. FEMA National Radio System        "
11070 PRINT "  5. FEMA National Voice System        "
11080 PRINT "  6. QUIT                              "
11090 PRINT
11100 COLOR 14,0,0:PRINT " ENTER OPTION DESIRED ";
11110 INPUT T
11120 PRINT
11130 CLS
11140 IF T = 1 THEN 11220
11150 IF T = 2 THEN 12620
11160 IF T = 3 THEN 13250
11170 IF T = 4 THEN 13510
11180 IF T = 5 THEN 13380
11190 IF T = 6 THEN 4000
11200 GOTO 10950
11210 REM ************************************************
11220 CLS:SCREEN 0:WIDTH 40:COLOR 14,0,0
11230 PRINT "    THE EMERGENCY BROADCAST SYSTEM"
11240 PRINT "          System Description"
11250 PRINT
11260 PRINT "    The National-level EBS, when acti-"
11270 PRINT "vated, consists of a nationwide network"
11280 PRINT "of voluntary participating radio and TV"
11290 PRINT "(audio only) stations interconnected by"
11300 PRINT "telephone company circuitry. The system"
11310 PRINT "is designed to maintain communications"
11320 PRINT "with the public during an emergency by"
11330 PRINT "broadcasting emergency instructions,"
11340 PRINT "news, Governor's and Presidential mes-"
11350 PRINT "sages."
```

```
11360 PRINT
11370 PRINT "SELECT ONE OF THE FOLLOWING OPTIONS"
11380 PRINT
11390 PRINT "  1. Activation Procedures"
11400 PRINT "  2. (300) Network (Telephone)"
11410 PRINT "  3. Contacts List"
11420 PRINT "  4. (500) Network (Teletype)"
11430 PRINT "  5. Primary Relay Stations "
11440 PRINT "  6. QUIT"
11450 PRINT
11460 PRINT "ENTER OPTION DESIRED ";
11470 INPUT TI
11480 IF TI=6 THEN GOTO 10960
11490 IF DRV$>"B:" THEN 11510
11495 PRINT "ENTER DISC NO. S-18 IN THE"
11500 INPUT "B-DRIVE AND ENTER RETURN";D$
11510 WIDTH 40
11520 IF TI=1 THEN GOTO 11570
11530 IF TI=2 THEN GOTO 11880
11540 IF TI=3 THEN GOTO 12290
11550 IF TI=4 THEN GOTO 12060
11560 IF TI=5 THEN GOTO 12350
11570 CLS:SCREEN 0:COLOR 14,0,0
11580 N$=DRV$ + "EBSCHT"
11590 CLS
11600 GOSUB 1460
11610 S$=DRV$ + "EBSCHTS"
11620 GOSUB 13180
11630 LOCATE 1,1
11640 PRINT
11650 PRINT CHR$(218);
11660 FOR I=1 TO 26
11670 PRINT CHR$(196);
11680 NEXT I
11690 PRINT CHR$(191)
11700 FOR I=1 TO 8
11710 PRINT CHR$(179):LOCATE 2+I,28:PRINT CHR$(179)
11720 NEXT I
11730 PRINT CHR$(192);
11740 FOR I=1 TO 26
11750 PRINT CHR$(196);
11760 NEXT I
11770 PRINT CHR$(217)
11780 PRINT
11790 PRINT
11800 INPUT " SELECTION ";TT$
11810 IF TT$="0" THEN GOTO 11220
```

```
11820 IF VAL(TT$) < 0 OR VAL(TT$) > 6 THEN GOTO 11570
11830 PASS$=TT$
11840 SET=1
11850 X$=DRV$ + "EBSDETAI"
11860 GOSUB 1090
11870 GOTO 11570
11880 CLS
11890 N$="USAOUT.TXT"
11900 CLS
11910 GOSUB 1460
11920 N$=DRV$ + "EBS300C"
11930 GOSUB 1460
11940 S$=DRV$ + "EBS300S"
11950 GOSUB 13180
11960 LOCATE 23,1
11970 PRINT "DO YOU WISH TO SEE NARRATIVE DATA ? "
11980 INPUT "ENTER Y FOR YES OR N FOR NO ",ANS$
11990 PRINT CHR$(27);"S1"
12000 IF ANS$="N" THEN GOTO 11220
12010 PASS$="7"
12020 X$=DRV$ + "EBSDETAI"
12030 SET=1
12040 GOSUB 1090
12050 GOTO 11220
12060 CLS
12070 N$="USAOUT.TXT"
12080 CLS
12090 GOSUB 1460
12100 N$=DRV$ + "EBS500C"
12110 GOSUB 1460
12120 S$=DRV$ + "EBS500S"
12130 GOSUB 13180
12140 INPUT "Detail on Next Page. Enter C to Continue or R to Return to menu ";
      ANS$
12150 IF ANS$="R" THEN GOTO 11210
12160 X$=DRV$ + "EBSDETAI"
12170 PASS$="8"
12180 SET=1
12190 GOSUB 1090
12200 CLS
12210 INPUT "ENTER R TO RETURN TO MAP, M FOR MENU OR N FOR NARRATIVE ";ANS$
12220 IF ANS$="R" THEN GOTO 12060
12230 IF ANS$="M" THEN GOTO 11210
12240 PASS$="9"
12250 SET=1
12260 GOSUB 1090
12270 GOTO 11210
```

```
12280 GOTO 11220
12290 CLS
12300 PASS$="10"
12310 X$=DRV$ + "EBSDETAI"
12320 SET=1
12330 GOSUB 1090
12340 GOTO 11220
12350 CLS
12360 PRINT"PRIMARY RELAY STATIONS"
12370 PRINT:PRINT
12380 OPEN "I",#1,DRV$ + "PRADIO"
12390 K=1
12400 J=4
12410 IF EOF(1) THEN 12590
12420 INPUT #1,S$,R$,L$,T$
12430 PRINT " STATE:   ";S$
12440 J=J+1
12450 PRINT " RADIO STATION:   ";R$
12460 J=J+1
12470 PRINT " LOCATION:    ";L$
12480 J=J+1
12490 PRINT " TELEPHONE NO:   ";T$
12500 PRINT
12510 N=INT(51/J)
12520 K=K+1
12530 IF K>N THEN 12550
12540 GOTO 12410
12550 INPUT "ENTER C TO CONTINUE, Q TO QUIT";A$
12560 IF A$="Q" THEN 12590
12570 CLS
12580 GOTO 12390
12590 CLOSE
12600 INPUT "PRESS RETURN WHEN READY";C$
12610 GOTO 11220
12620 REM ***********************************************
12630 CLS:SCREEN 0:WIDTH 40:COLOR 14,1,0
12640 PRINT
12650 PRINT "            REGIONAL MENU             "
12660 PRINT "                                      "
12670 PRINT "    WHAT REGION DO YOU WANT TO SEE?   "
12680 PRINT "                                      "
12690 PRINT " REGION             STATES           "
12700 PRINT "                                      "
12710 PRINT "   1.   ME, NH, MA, VT, RI, CT        "
12720 PRINT "   2.   NY, NJ, PR, VI                "
12730 PRINT "   3.   PA, WV, VA, MD, DC(NCR), DE   "
12750 PRINT "   4.   KY, TN, NC, SC, GA, AL, MS, FL"
```

```
12770 PRINT "   5.    MI, WI, IL, IN, OH, MN          "
12780 PRINT "   6.    TX, OK, AR, LA, NM              "
12790 PRINT "   7.    IA, MO, NE, KS                  "
12800 PRINT "   8.    ND, SD, MT, WY, UT, CO          "
12810 PRINT "   9.    NV, CA, AZ, HI, GU, AS          "
12820 PRINT "  10.    WA, OR, ID, AK                  "
12830 PRINT "  11.    Quit                            "
12840 PRINT
12850 COLOR 14,0,0:PRINT "     ENTER SELECTED REGION";
12860 INPUT R
12870 PRINT
12880 IF R=11 THEN GOTO 10960
12890 WIDTH 80
12900 IF DRV$>"B:" THEN 12910
12905 INPUT "      PLACE DISC NO. 16 IN DISC DRIVE B AND ENTER RETURN";RET$
12910 RESET
12920 CLS
12930 IF R=1 THEN N$=DRV$ + "REGION1.TXT": VAR$="R1"
12940 IF R=2 THEN N$=DRV$ + "REGION2.TXT": VAR$="R2"
12950 IF R=3 THEN N$=DRV$ + "REGION3.TXT": VAR$="R3"
12960 IF R=4 THEN N$=DRV$ + "REGION4.TXT": VAR$="R4"
12970 IF R=5 THEN N$=DRV$ + "REGION5.TXT": VAR$="R5"
12980 IF R=6 THEN N$=DRV$ + "REGION6.TXT": VAR$="R6"
12990 IF R=7 THEN N$=DRV$ + "REGION7.TXT": VAR$="R7"
13000 IF R=8 THEN N$=DRV$ + "REGION8.TXT": VAR$="R8"
13010 IF R=9 THEN N$=DRV$ + "REGION9.TXT": VAR$="R9"
13020 IF R=10 THEN N$=DRV$ + "REGION10.TXT": VAR$="R10"
13030 IF R > 11 OR R < 1 THEN  GRAPH: GOTO 12850
13040 WIDTH 80:CLS:SCREEN 2:COLOR 14,0,0
13050 PRINT
13060 PRINT "                                    REGION ";R
13070 GOSUB 1460
13080 FOR I=1 TO 22
13090 PRINT "."
13100 NEXT I
13110 PRINT "DO YOU WANT REGION ";R;"INFO?"
13120 INPUT "ENTER Y FOR YES OR N FOR NO";W$
13130 IF W$="N" THEN GOTO 12630
13140 SET=0
13150 X$ = DRV$ + "STATLIST"
13160 GOSUB 14950
13170 GOTO 12630
13180 OPEN "I", #1,S$
13190 IF EOF(1) THEN GOTO 13230
13200 INPUT #1, ROW,COL,A$
13210 LOCATE ROW,COL:PRINT A$
13220 GOTO 13190
```

```
13230 CLOSE
13240 RETURN
13250 F$=DRV$ + "NATSNODE"
13260 G$=DRV$ + "NATSNAR"
13270 H$=DRV$ + "DLEGEND"
13280 E$=DRV$ + "NATSLINK"
13290 CAT2$="CRC"
13300 CAT4$="FRC"
13310 CAT5$="SCDO"
13320 ST$="FNATS"
13330 PRINT "Place Disk No. D-18 into the B-drive "
13340 INPUT "and press RETURN.",B$
13350 CLS
13360 GOSUB 4340
13370 GOTO 10950
13380 E$=DRV$ + "NAVSLINK"
13390 F$=DRV$ + "NAVSNODE"
13400 G$=DRV$ + "NAVSNAR"
13410 H$=DRV$ + "DLEGEND"
13420 CAT1$="ASC"
13430 CAT2$="FRC"
13440 CAT5$="SCDO"
13450 ST$="FNAVS"
13460 PRINT "Place Disk No. D-18 into the B-Drive"
13470 INPUT "and press RETURN.",B$
13480 CLS
13490 GOSUB 4340
13500 GOTO 10950
13510 E$=DRV$ + "NARSLINK"
13520 F$=DRV$ + "NARSNODE"
13530 G$=DRV$ + "NARSNAR"
13540 H$=DRV$ + "DLEGEND"
13550 CAT1$ = "ASC"
13560 CAT2$="FRC"
13570 CAT4$="NET"
13580 CAT5$="SCDO"
13590 ST$="FNARS"
13600 PRINT "Place Disk No. D-18 into the B-drive"
13610 INPUT "and press RETURN.",B$
13620 CLS
13630 GOSUB 4340
13640 GOTO 10950
13650 REM ************************************************************
13660 PAD$="  Commercial Communications Systems "
13670 GOSUB 650
13680 TES=0
13690 GOSUB 580
```

```
13700 PRINT
13710 PRINT "     Commercial Systems available:     "
13720 PRINT "                                       "
13730 PRINT "   1. Comm. Sat. Conus                 "
13740 PRINT "   2. MCI Microwave System             "
13750 PRINT "   3. MCI Fiber Optic Routes           "
13760 PRINT "   4. QUIT                             "
13770 PRINT
13780 COLOR 14,0,0:PRINT " ENTER OPTION DESIRED ";
13790 INPUT T
13800 PRINT
13810 CLS
13820 IF T=4 THEN 4000
13830 IF T=1 THEN 13870
13840 IF T=2 THEN 14040
13850 IF T=3 THEN 14150
13860 GOTO 13650
13870 CLS
13880 N$="USAOUT.TXT"
13890 GOSUB 1460
13900 N$=DRV$ + "COMSAT.TXT"
13910 GOSUB 1460
13920 S$=DRV$ + "COMSATD.TXT"
13930 GOTO 13970
13940 LOCATE 23,1
13950 INPUT;" PRESS RETURN WHEN READY  ";B
13960 GOTO 13660
13970 OPEN "I", #1,S$
13980 IF EOF(1) THEN GOTO 14020
13990 INPUT #1, ROW,COL,A$
14000 LOCATE ROW,COL:PRINT A$
14010 GOTO 13980
14020 CLOSE
14030 GOTO 13940
14040 F$=DRV$ + "MCINODE"
14050 G$=DRV$ + "MCINAR"
14060 H$=DRV$ + "LEGEND"
14070 E$=DRV$ + "MCILINK"
14080 ST$="MCI"
14090 CAT1$="TERM"
14100 CAT2$="JUNC"
14110 CAT3$="REPT"
14120 CLS
14130 GOSUB 4340
14140 GOTO 13650
14150 E$=DRV$ + "MFOLINK"
14160 F$=DRV$ + "MFONODE"
```

```
14170 G$=DRV$ + "MFONAR"
14180 H$=DRV$ + "LEGEND"
14190 ST$="MCI FO"
14200 CAT1$="TERM"
14210 CAT2$="JUNC"
14220 CAT7$="TAND"
14230 GOSUB 4340
14240 GOTO 13650
14250 END
14260 REM ******************************************************
14270 PAD$="     Critical Comm. Facilities      "
14280 GOSUB 650
14290 TES=0
14300 GOSUB 580
14310 PRINT
14320 PRINT "  Key Facility List"
14330 PRINT "                                "
14340 PRINT "  1. Conus CCF's                 "
14350 PRINT "                                 "
14360 PRINT "  2. QUIT                        "
14370 PRINT
14380 PRINT " ENTER OPTION DESIRED ";
14390 INPUT T
14400 PRINT
14410 CLS
14420 IF T = 1 THEN 14450
14430 IF T = 2 THEN 4000
14440 GOTO 14260
14450 CLS
14460 F$=DRV$ + "CRITFAX"
14470 G$=DRV$ + "CRITNAR"
14480 H$=DRV$ + "LEGEND"
14490 ST$="CRITICAL"
14500 CAT2$="ALL"
14510 GOSUB 4340
14520 GOTO 14260
14530 END
14540 IF ANS$="P" THEN 14800
14550 CLS:WIDTH 80
14560 PRINT
14570 PRINT"                                ";ST$;" FACILITIES LIST"
14580 PRINT
14590 PRINT"                                                    U.S. MAP  REGION"
14600 PRINT"        FACILITY          LAT   LON    X    Y    X    Y   SYS
       STAT   CODE"
14610 PRINT
14620 K=0
```

```
14630 OPEN "I",#1,F$
14640 IF EOF(1) THEN GOTO 14760
14650 INPUT #1,LAT,LON,A$,X,Y,X1,Y1,STAT,SYS$,NOD
14660 IF LAT=0 AND LON=0 THEN 14640
14670 PRINT A$; TAB(24); LAT; TAB(30); LON; TAB(37); X; TAB(42); Y; TAB(47); X1; TAB(52);
      Y1; TAB(58); SYS$; TAB(63); STAT; TAB(70); NOD
14680 K=K+1
14690 IF K<15 THEN GOTO 14640
14700 PRINT
14710 INPUT "ENTER C TO CONTINUE OR Q TO QUIT "; C$
14720 IF C$ = "Q" THEN 14760
14730 PRINT
14740 K=0
14750 GOTO 14640
14760 PRINT
14770 CLOSE
14780 INPUT "PRESS RETURN WHEN READY"; Q$
14790 GOTO 14940
14800 WIDTH 40: CLS
14810 INPUT "POSITION PAPER AND RETURN"; C$
14820 LPRINT "                              "; ST$; " FACILITIES LIST"
14830 LPRINT
14840 LPRINT "                                                  U.S. MAP    REGION"
14850 LPRINT "        FACILITY          LAT    LON     X     Y     X     Y    SYS
      STATUS    CODE"
4860 LPRINT
14870 OPEN "I",#1,F$
14880 IF EOF(1) THEN GOTO 14930
14890 INPUT #1,LAT,LON,A$,X,Y,X1,Y1,STAT,SYS$,NOD
14900 IF LAT=0 AND LON=0 THEN 14880
14910 LPRINT A$; TAB(24); LAT; TAB(30); LON; TAB(37); X; TAB(42); Y; TAB(47); X1; TAB(52);
      Y1; TAB(58); SYS$; TAB(64); STAT; TAB(70); NOD
14920 GOTO 14880
14930 CLOSE
14940 RETURN
14950 REM ********************LISTS************************
14960 CLS: WIDTH 80
14970 PRINT "To receive information concerning a category enter a Y for yes."
14980 PRINT "Enter RETURN for default, for all categories default is no."
14990 PRINT
15000 PRINT
15010 INPUT "              NAME"; A$
15020 INPUT "              STATUS"; B$
15030 INPUT "              POSITION TITLE"; C$
15040 INPUT "              DDD PHONE NO."; D$
15050 INPUT "              FTS PHONE NO."; E$
15060 INPUT "              AUTOVON PHONE NO."; F$
```

```
15070 INPUT "              HOME ADDRESS";G$
15080 INPUT "              HOME PHONE";H$
15090 CLS:WIDTH 80
15100 PRINT
15110 PRINT
15120 INPUT "ENTER S FOR SCREEN LISTING, P FOR A PAPER LISTING";L$
15130 CLS
15140 IF L$ = "P" THEN 15530
15150 PRINT TLE$
15160 PRINT
15170 OPEN "I",#1,X$
15180 K=1
15190 IF EOF(1) THEN 15500
15200 INPUT#1,DIF$,QAME$,STAT$,P$,DDD$,FTS$,VON$,HADD1$,HADD2$,HNO$
15210 IF VAR$="ALL" THEN 15230
15220 IF DIF$<>VAR$ THEN 15190
15230 J=1
15240 IF A$="Y" THEN PRINT "NAME:            ";QAME$
15250 IF A$="Y" THEN J=J+1
15260 IF B$="Y" THEN PRINT "STATUS:          ";STAT$
15270 IF B$="Y" THEN J=J+1
15280 IF C$="Y" THEN PRINT "POSITION:        ";P$
15290 IF C$="Y" THEN J=J+1
15300 IF D$="Y" THEN PRINT "DDD NO.:         ";DDD$
15310 IF D$="Y" THEN J=J+1
15320 IF E$="Y" THEN PRINT "FTS NO.:         ";FTS$
15330 IF E$="Y" THEN J=J+1
15340 IF F$="Y" THEN PRINT "AUTOVON NO.:     ";VON$
15350 IF F$="Y" THEN J=J+1
15360 IF G$="Y" THEN PRINT "HOME ADDRESS:    ";HADD1$
15370 IF G$="Y" THEN J=J+2
15380 IF G$="Y" THEN PRINT "                 ";HADD2$
15390 IF H$="Y" THEN J=J+1
15400 IF H$="Y" THEN PRINT "HOME PHONE:      ";HNO$
15410 PRINT
15420 N=INT(23/J)
15430 K=K+1
15440 IF K>N THEN 15460
15450 GOTO 15190
15460 INPUT "ENTER C TO CONTINUE, Q TO QUIT";Y$
15470 IF Y$="Q" THEN 15500
15480 CLS
15490 GOTO 15180
15500 CLOSE
15510 INPUT "PRESS RETURN WHEN READY";V$
15520 RETURN
15530 REM******************PAPER LISTS******************
```

```
15540 INPUT "POSITION PAPER AND ENTER RETURN";Q
15550 LPRINT TLE$
15560 LPRINT
15570 LPRINT
15580 OPEN "I",#1,X$
15590 IF EOF(1) THEN 15750
15600 INPUT #1,DIF$,QAME$,STAT$,P$,DDD$,FTS$,VON$,HADD1$,HADD2$,HNO$
15610 IF VAR$="ALL" THEN 15640
15620 IF DIF$<>VAR$ THEN 15590
15630 IF A$="Y" THEN LPRINT "     NAME:            ";QAME$
15640 IF B$="Y" THEN LPRINT "     STATUS:          ";STAT$
15650 IF C$="Y" THEN LPRINT "     POSITION:        ";P$
15660 IF D$="Y" THEN LPRINT "     DDD NO.:         ";DDD$
15670 IF E$="Y" THEN LPRINT "     FTS NO.:         ";FTS$
15680 IF F$="Y" THEN LPRINT "     AUTOVON NO.:     ";VON$
15690 IF G$="Y" THEN LPRINT "     HOME ADDRESS:    ";HADD1$
15700 IF G$="Y" THEN LPRINT "                      ";HADD2$
15710 IF H$="Y" THEN LPRINT "     HOME PHONE:      ";HNO$
15720 LPRINT
15730 LPRINT
15740 GOTO 15590
15750 CLOSE
15760 INPUT "PRINTING IS COMPLETE.  PRESS RETURN WHEN READY";W$
15770 RETURN
15780 GOTO 4010
```

fo on

Appendix D

NCSPOC.BAS Listing

```
01 COMMON DRV$
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C: LASTFILE$=" "
35 GOTO 4000
250 PAD$="           Main  Menu                "
260 GOSUB 550
270 TES=0
280 GOSUB 580
290 REM*****************************************************
300 PRINT
310 PRINT"  1. P.O.C. Lists                          "
320 PRINT"  2. Emergency Activation Procedures       "
330 PRINT"  3. Network Status Monitoring             "
340 PRINT"  4. Damage Assessment                     "
350 PRINT"  5. Resolution of Claim                   "
360 PRINT"  6. Zooming                               "
370 PRINT"  7. Word Processing (WordStar)            "
380 PRINT"  8. NSC Processing Module                 "
390 PRINT"  9. QUIT                                  "
400 COLOR 14,0,0: PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
```

```
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM*************************************************************
660 REM*                                                           *
670 REM*   This Subroutine produces the logo box for the menus.    *
680 REM*                                                           *
690 REM*************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
```

```
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ*************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM************FILE PLOT***************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
```

```
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
```

```
2000 LINE (X,Y-2)-(X+4,Y+2):LINE -(X-4,Y-1):LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10):LINE -(X+20,Y):LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y):LINE -(X+6,Y-6):LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
```

```
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
```

```
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
```

```
3410 SHELL "WS
3420 CLS
3430 GOTO 250
4000 REM ***********************************************
4010 PAD$="            POC List                  "
4020 GOSUB 650
4030 TES=0
4040 GOSUB 580
4050 PRINT
4060 PRINT " Government                                  "
4070 PRINT "   1. NCS              2. NASA               "
4080 PRINT "   3. FCC              4. OSTP               "
4090 PRINT "   5. Agency Rep.'s    6. EOC                "
4100 PRINT "   7. NCS Recall       8. DGCC Recall        "
4110 PRINT "   9. State Lists                            "
4120 PRINT " Industry                                    "
4130 PRINT "  10. Pers. Rosters   11. EOC                "
4140 PRINT "  12. QUIT                                   "
4150 PRINT:COLOR 14,0,0:PRINT "  ENTER OPTION DESIRED ";
4160 INPUT T
4170 WIDTH 80
4180 IF T = 12 THEN 250
4185 IF DRV$>"B:" THEN 4210
4190 PRINT "ENTER DISC NO. D-16 IN THE"
4200 INPUT "B-DRIVE AND ENTER RETURN";B$
4210 CLS
4220 IF T = 1 THEN 5940
4230 IF T = 2 THEN 8310
4240 IF T = 3 THEN 6640
4250 IF T = 4 THEN GOSUB 1040
4260 IF T = 5 THEN 6230
4270 IF T = 6 THEN 6990
4280 IF T = 7 THEN 7280
4290 IF T = 8 THEN 7310
4300 IF T = 9 THEN 7900
4310 IF T = 10 THEN GOSUB 1040
4320 IF T = 11 THEN 9180
4330 GOTO 4010
4340 REM*******************LISTS***********************
4350 CLS:WIDTH 80
4360 PRINT "To receive information concerning a category enter a Y for yes."
4370 PRINT "Enter RETURN for default, for all categories default is no."
4380 PRINT
4390 PRINT
4400 INPUT "              NAME";A$
4410 INPUT "              STATUS";B$
4420 INPUT "              POSITION TITLE";C$
```

```
4430 INPUT "              DDD PHONE NO.";D$
4440 INPUT "              FTS PHONE NO.";E$
4450 INPUT "              AUTOVON PHONE NO.";F$
4460 INPUT "              HOME ADDRESS";G$
4470 INPUT "              HOME PHONE";H$
4480 CLS:WIDTH 80
4490 PRINT
4500 PRINT
4510 INPUT "ENTER S FOR SCREEN LISTING, P FOR A PAPER LISTING";L$
4520 CLS
4530 IF L$ = "P" THEN 4920
4540 PRINT TLE$
4550 PRINT
4560 OPEN "I",#1,X$
4570 K=1
4580 IF EOF(1) THEN 4890
4590 INPUT#1,DIF$,QAME$,STAT$,P$,DDD$,FTS$,VON$,HADD1$,HADD2$,HNO$
4600 IF VAR$="ALL" THEN 4620
4610 IF DIF$<>VAR$ THEN 4580
4620 J=1
4630 IF A$="Y" THEN PRINT "NAME:           ";QAME$
4640 IF A$="Y" THEN J=J+1
4650 IF B$="Y" THEN PRINT "STATUS:         ";STAT$
4660 IF B$="Y" THEN J=J+1
4670 IF C$="Y" THEN PRINT "POSITION:       ";P$
4680 IF C$="Y" THEN J=J+1
4690 IF D$="Y" THEN PRINT "DDD NO.:        ";DDD$
4700 IF D$="Y" THEN J=J+1
4710 IF E$="Y" THEN PRINT "FTS NO.:        ";FTS$
4720 IF E$="Y" THEN J=J+1
4730 IF F$="Y" THEN PRINT "AUTOVON NO.:    ";VON$
4740 IF F$="Y" THEN J=J+1
4750 IF G$="Y" THEN PRINT "HOME ADDRESS:   ";HADD1$
4760 IF G$="Y" THEN J=J+2
4770 IF G$="Y" THEN PRINT "                ";HADD2$
4780 IF H$="Y" THEN J=J+1
4790 IF H$="Y" THEN PRINT "HOME PHONE:     ";HNO$
4800 PRINT
4810 N=INT(23/J)
4820 K=K+1
4830 IF K>N THEN 4850
4840 GOTO 4580
4850 INPUT "ENTER C TO CONTINUE, Q TO QUIT";Y$
4860 IF Y$="Q" THEN 4890
4870 CLS
4880 GOTO 4570
4890 CLOSE
```

```
4900 INPUT "PRESS RETURN WHEN READY";V$
4910 RETURN
4920 REM*******************PAPER LISTS*****************
4930 INPUT "POSITION PAPER AND ENTER RETURN";Q
4940 LPRINT TLE$
4950 LPRINT
4960 LPRINT
4970 OPEN "I",#1,X$
4980 IF EOF(1) THEN 5140
4990 INPUT #1,DIF$,QAME$,STAT$,P$,DDD$,FTS$,VON$,HADD1$,HADD2$,HNO$
5000 IF VAR$="ALL" THEN 5030
5010 IF DIF$<>VAR$ THEN 4980
5020 IF A$="Y" THEN LPRINT "     NAME:            ";QAME$
5030 IF B$="Y" THEN LPRINT "     STATUS:          ";STAT$
5040 IF C$="Y" THEN LPRINT "     POSITION:        ";P$
5050 IF D$="Y" THEN LPRINT "     DDD NO.:         ";DDD$
5060 IF E$="Y" THEN LPRINT "     FTS NO.:         ";FTS$
5070 IF F$="Y" THEN LPRINT "     AUTOVON NO.:     ";VON$
5080 IF G$="Y" THEN LPRINT "     HOME ADDRESS:    ";HADD1$
5090 IF G$="Y" THEN LPRINT "                      ";HADD2$
5100 IF H$="Y" THEN LPRINT "     HOME PHONE:      ";HNO$
5110 LPRINT
5120 LPRINT
5130 GOTO 4980
5140 CLOSE
5150 INPUT "PRINTING IS COMPLETE.  PRESS RETURN WHEN READY";W$
5160 RETURN
5170 GOTO 4010
5180 REM*******************EOC LISTS*******************
5190 CLS
5200 PRINT "To receive information concerning a category enter a Y for yes."
5210 PRINT "Enter RETURN for default, for all categories default is no."
5220 PRINT
5230 PRINT
5240 INPUT "              LOCATION";A$
5250 INPUT "              DDD PHONE NO.";B$
5260 INPUT "              FTS PHONE NO.";C$
5270 INPUT "              AUTOVON PHONE NO.";D$
5280 INPUT "              ADDRESS";E$
5290 CLS
5300 PRINT
5310 PRINT
5320 INPUT "ENTER S FOR SCREEN LISTING, P FOR A PAPER LISTING";L$
5330 CLS
5340 IF L$ = "P" THEN 5700
5350 PRINT TLE$
5360 PRINT
```

```
5370 PRINT
5380 OPEN "I",#1,X$
5390 K=1
5400 J=3
5410 IF EOF(1) THEN 5670
5420 INPUT #1,AGC$,LCT$,DDD$,FTS$,VON$,ADD1$,ADD2$
5430 IF SYS$="ALL" THEN 5450
5440 IF AGC$< >SYS$ THEN 5400
5450 PRINT "     AGENCY:          ";AGC$
5460 IF A$="Y" THEN PRINT "     LOCATION:        ";LCT$
5470 IF A$="Y" THEN J=J+1
5480 IF B$="Y" THEN PRINT "     DDD NO.:         ";DDD$
5490 IF B$="Y" THEN J=J+1
5500 IF C$="Y" THEN PRINT "     FTS NO.:         ";FTS$
5510 IF C$="Y" THEN J=J+1
5520 IF D$="Y" THEN PRINT "     AUTOVON NO.:     ";VON$
5530 IF D$="Y" THEN J=J+1
5540 IF E$="Y" THEN PRINT "     ADDRESS:         ";ADD1$
5550 IF E$="Y" THEN J=J+2
5560 IF E$="Y" THEN PRINT "                      ";ADD2$
5570 PRINT
5580 PRINT
5590 N=INT(23/J)
5600 K=K+1
5610 IF K>N THEN 5630
5620 GOTO 5410
5630 INPUT "ENTER C TO CONTINUE, OR Q TO QUIT";Y$
5640 IF Y$="Q" THEN 5670
5650 CLS
5660 GOTO 5390
5670 CLOSE
5680 INPUT "PRESS RETURN WHEN READY";V$
5690 RETURN
5700 REM******************PAPER LISTS******************
5710 INPUT "POSITION PAPER AND ENTER RETURN";Q
5720 LPRINT TLE$
5730 LPRINT
5740 LPRINT
5750 OPEN "I",#1,X$
5760 IF EOF(1) THEN 5900
5770 INPUT #1,AGC$,LCT$,DDD$,FTS$,VON$,ADD1$,ADD2$
5780 IF SYS$="ALL" THEN 5800
5790 IF SYS$< >AGC$ THEN 5760
5800 LPRINT "     AGENCY:          ";AGC$
5810 IF A$="Y" THEN LPRINT "     LOCATION:        ";LCT$
5820 IF B$="Y" THEN LPRINT "     DDD NO.:         ";DDD$
5830 IF C$="Y" THEN LPRINT "     FTS NO.:         ";FTS$
```

```
5840 IF D$="Y" THEN LPRINT "     AUTOVON NO.:     ";VON$
5850 IF E$="Y" THEN LPRINT "     ADDRESS:         ";ADD1$
5860 IF E$="Y" THEN LPRINT "                      ";ADD2$
5870 LPRINT
5880 LPRINT
5890 GOTO 5760
5900 CLOSE
5910 INPUT "PRINTING IS COMPLETE.  PRESS RETURN WHEN READY";W$
5920 RETURN
5930 GOTO 4010
5940 REM*******************NCS************************
5950 CLS
5960 PRINT
5970 PRINT
5980 PRINT TAB(15)"     Personnel lists are available at the:"
5990 PRINT TAB(15)"                1. National Level"
6000 PRINT TAB(15)"                2. Regional Level"
6010 PRINT TAB(15)"                3. or QUIT"
6020 PRINT
6030 PRINT TAB(15)"     ENTER OPTION:  ";
6040 INPUT OPT
6050 TLE$="                    NCS Personnel"
6060 X$=DRV$ + "PNCS"
6070 IF OPT = 3 THEN 4010
6080 IF OPT = 1 THEN VAR$="REG0"
6090 IF OPT = 2 THEN GOSUB 1040
6100 IF OPT=2 THEN 5940
6110 IF R=1 THEN VAR$="REG1"
6120 IF R=2 THEN VAR$="REG2"
6130 IF R=3 THEN VAR$="REG3"
6140 IF R=4 THEN VAR$="REG4"
6150 IF R=5 THEN VAR$="REG5"
6160 IF R=6 THEN VAR$="REG6"
6170 IF R=7 THEN VAR$="REG7"
6180 IF R=8 THEN VAR$="REG8"
6190 IF R=9 THEN VAR$="REG9"
6200 IF R=10 THEN VAR$="REG10"
6210 GOSUB 4340
6220 GOTO 5940
6230 REM***************AGENCIES**********************
6240 CLS
6250 PRINT
6260 PRINT
6270 PRINT "     Personnel lists are available for these agencies:"
6280 PRINT "               1. CIA"
6290 PRINT "               2. Dept. of Commerce"
6300 PRINT "               3. DOD"
```

```
6310 PRINT "                4. Dept. of Energy"
6320 PRINT "                5. Dept. of Interior"
6330 PRINT "                6. Dept. of State"
6340 PRINT "                7. Dept. of Transportation"
6350 PRINT "                8. FAA"
6360 PRINT "                9. FEMA"
6370 PRINT "               10. GSA"
6380 PRINT "               11. NASA"
6390 PRINT "               12. USCG"
6400 PRINT "               13. USIA"
6410 PRINT "               14. ALL Agencies"
6420 PRINT "               15. or QUIT"
6430 PRINT
6440 INPUT "Enter Option:",OPT
6450 TLE$="                NCS Agency Principals and Representatives"
6460 X$=DRV$ + "PAGC"
6470 IF OPT =1 THEN VAR$="CIA"
6480 IF OPT =2 THEN VAR$="DOC"
6490 IF OPT =3 THEN VAR$="DOD"
6500 IF OPT =4 THEN VAR$="DOE"
6510 IF OPT =5 THEN VAR$="DOI"
6520 IF OPT =6 THEN VAR$="DOS"
6530 IF OPT =7 THEN VAR$="DOT"
6540 IF OPT =8 THEN VAR$="FAA"
6550 IF OPT =9 THEN VAR$="FEMA"
6560 IF OPT =10 THEN VAR$="GSA"
6570 IF OPT =11 THEN VAR$="NASA"
6580 IF OPT =12 THEN VAR$="USCG"
6590 IF OPT =13 THEN VAR$="USIA"
6600 IF OPT =14 THEN VAR$="ALL"
6610 IF OPT =15 THEN 4000
6620 GOSUB 4340
6630 GOTO 6230
6640 REM*******************FCC**************************
6650 CLS
6660 PRINT
6670 PRINT
6680 PRINT TAB(15)"     Personnel lists are available at the:"
6690 PRINT TAB(15)"                1. National Level"
6700 PRINT TAB(15)"                2. Regional Level"
6710 PRINT TAB(15)"                3. or QUIT"
6720 PRINT
6730 PRINT TAB(15)"Enter Option:  ";
6740 INPUT OPT
6750 TLE$="                        FCC Personnel"
6760 X$=DRV$ + "PFCC"
6770 IF OPT = 3 THEN 4000
```

```
6780 IF OPT = 1 THEN VAR$="NAT"
6790 IF OPT = 1 THEN 6970
6800 CLS
6810 PRINT
6820 PRINT TAB(15)"   Choose from these regions: "
6830 PRINT TAB(15)"                1. Atlanta"
6840 PRINT TAB(15)"                2. Boston"
6850 PRINT TAB(15)"                3. Chicago"
6860 PRINT TAB(15)"                4. Kansas City"
6870 PRINT TAB(15)"                5. San Francisco"
6880 PRINT TAB(15)"                6. Seattle"
6890 PRINT TAB(15)"Enter Option:  ";
6900 INPUT F
6910 IF F=1 THEN VAR$="RA"
6920 IF F=2 THEN VAR$="RB"
6930 IF F=3 THEN VAR$="RC"
6940 IF F=4 THEN VAR$="RK"
6950 IF F=5 THEN VAR$="RF"
6960 IF F=6 THEN VAR$="RS"
6970 GOSUB 4340
6980 GOTO 6640
6990 REM******************EOCs*************************
7000 CLS
7010 PRINT
7020 PRINT
7030 PRINT "     Emergency Operation Centers are available for these agencies:"
7040 PRINT "                1. NCS/DCAOC"
7050 PRINT "                2. FEMA"
7060 PRINT "                3. GSA"
7070 PRINT "                4. FAA"
7080 PRINT "                5. DOD"
7090 PRINT "                6. Dept. of State"
7100 PRINT "                7. FCC"
7110 PRINT "                8. ALL Centers"
7120 PRINT "                9. or QUIT"
7130 PRINT
7140 INPUT "Enter Option";OPT
7150 TLE$="                    Emergency Operations Centers"
7160 X$=DRV$ + "EOCA"
7170 IF OPT = 1 THEN SYS$="NCS"
7180 IF OPT = 2 THEN SYS$="FEMA"
7190 IF OPT = 3 THEN SYS$="GSA"
7200 IF OPT = 4 THEN SYS$="FAA"
7210 IF OPT = 5 THEN SYS$="DOD"
7220 IF OPT = 6 THEN SYS$="DOS"
7230 IF OPT = 7 THEN SYS$="FCC"
7240 IF OPT = 8 THEN SYS$="ALL"
```

```
7250 IF OPT = 9 THEN 4000
7260 GOSUB 5180
7270 GOTO 6990
7280 RECAD$=DRV$ + "RECALLD"
7290 RECAN$=DRV$ + "RECALN"
7300 GOTO 7330
7310 RECAD$=DRV$ + "DGCCD"
7320 RECAN$=DRV$ + "DGCCN"
7330 NUM=0
7340 SCREEN 0:COLOR 14,0,0
7350 OPEN "I",#1,RECAD$
7360 OPEN "O",#2,"TEMP"
7370 IF EOF(1) THEN GOTO 7420
7380 INPUT #1, C,X,Y,D,S,E
7390 IF D < > NUM THEN GOTO 7370
7400 PRINT #2,C;",";X;",";Y;",";D;",";S;",";E
7410 GOTO 7370
7420 CLOSE
7430 N$="TEMP"
7440 GOSUB 1460
7450 KILL "TEMP"
7460 OPEN "I",#1,RECAN$
7470 IF EOF(1) THEN GOTO 7530
7480 INPUT #1,ROW,COL,A$,E
7490 IF E=77 THEN LOCATE (ROW+2),COL:PRINT A$
7500 IF E < > NUM THEN GOTO 7470
7510 LOCATE (ROW+2),COL:PRINT A$
7520 GOTO 7470
7530 CLOSE
7540 LOCATE 24,1
7550 IF RECAD$=DRV$ + "DGCCD" THEN 7590
7560 INPUT "ENTER NUMBER FROM DESIRED BOX (0 TO QUIT)";NUM
7570 IF NUM=0 THEN 4000
7580 GOTO 7340
7590 INPUT"Press RETURN when ready",RET$
7600 IF NUM=0 THEN NUM=1 ELSE 4000
7610 GOTO 7340
7620 END
7630 REM******************OSTP*************************
7640 TLE$="                          OSTP Personnel"
7650 X$="POSTP"
7660 VAR$="OSTP"
7670 GOSUB 4340
7680 GOTO 4000
7690 REM******************INDUSTRY POC*****************
7700 CLS
7710 PRINT
```

```
7720 PRINT
7730 PRINT "     Personnel lists are available for these companies:"
7740 PRINT "                1. AT&T"
7750 PRINT "                2. MCI"
7760 PRINT "                3. Western Union"
7770 PRINT "                4. ALL Companies"
7780 PRINT "                5. or QUIT"
7790 PRINT
7800 INPUT "Enter Option";OPT
7810 TLE$="                    Industry Personnel"
7820 X$="IPOC"
7830 IF OPT = 1 THEN VAR$="ATT"
7840 IF OPT = 2 THEN VAR$="MCI"
7850 IF OPT = 3 THEN VAR$="WU"
7860 IF OPT = 4 THEN VAR$="ALL"
7870 IF OPT = 5 THEN 4000
7880 GOSUB 4340
7890 GOTO 7690
7900 REM ***************STATE LISTS*********************
7910 CLS:SCREEN 0:WIDTH 40:COLOR 14,1,0
7920 PRINT
7930 PRINT "             REGIONAL MENU            "
7940 PRINT "                                      "
7950 PRINT "   WHAT REGION DO YOU WANT TO SEE?    "
7960 PRINT "                                      "
7970 PRINT "  REGION          STATES              "
7980 PRINT "                                      "
7990 PRINT "    1.      ME NH MA VT RI CT         "
8000 PRINT "    2.      NY NJ PR VI               "
8010 PRINT "    3.      DE PA WV VA MD DC(NCR)    "
8030 PRINT "    4.      AL MS FL KY TN NC SC GA   "
8050 PRINT "    5.      MI WI IL IN OH MN         "
8060 PRINT "    6.      TX OK AR LA NM            "
8070 PRINT "    7.      IA MO NE KS               "
8080 PRINT "    8.      ND SD MT WY UT CO         "
8090 PRINT "    9.      NV CA AZ HI GU AS         "
8100 PRINT "   10.      WA OR ID AK               "
8110 PRINT "   11.      Quit                      "
8120 PRINT:COLOR 14,0,0
8130 PRINT "     ENTER SELECTED REGION";
8140 INPUT R
8150 PRINT
8160 IF R=11 THEN GOTO 4000
8170 CLS
8180 X$=DRV$ + "STATLIST"
8190 IF R=1 THEN  VAR$="R1"
8200 IF R=2 THEN  VAR$="R2"
```

```
8210 IF R=3 THEN  VAR$="R3"
8220 IF R=4 THEN  VAR$="R4"
8230 IF R=5 THEN  VAR$="R5"
8240 IF R=6 THEN  VAR$="R6"
8250 IF R=7 THEN  VAR$="R7"
8260 IF R=8 THEN  VAR$="R8"
8270 IF R=9 THEN  VAR$="R9"
8280 IF R=10 THEN VAR$="R10"
8290 GOSUB 4340
8300 GOTO 7900
8310 REM*********NASA**************
8320 CLS
8330 PRINT
8340 PRINT
8350 PRINT TAB(15)"Personnel lists are available for:"
8360 PRINT TAB(15)"          1. NASCOM Prime Commercial Carriers"
8370 PRINT TAB(15)"          2. NASCOM Prime Commercial Carrier"
8380 PRINT TAB(15)"             Points of Contact"
8390 PRINT TAB(15)"             (Space shuttle missions only)"
8400 PRINT TAB(15)"          3. Quit                "
8410 PRINT
8420 PRINT TAB(15)"ENTER OPTION:";
8430 INPUT TT
8440 IF TT = 3 THEN 4000
8450 REM******************LISTS************************
8460 CLS
8470 PRINT
8480 PRINT "To receive information concerning a category enter a Y for yes."
8490 PRINT "Enter RETURN for default, for all categories default is no."
8500 PRINT
8510 PRINT
8520 INPUT "             NAME OF FIRM:";NAMF$
8530 INPUT "             NAME OF BRANCH:";BRCH$
8540 INPUT "             NAME OF PERSON:";NAMP$
8550 INPUT "             PHONE NO.:";PHNO$
8560 INPUT "             ROUTING NO.:";RONO$
8570 CLS
8580 PRINT:PRINT
8590 INPUT "ENTER S FOR SCREEN LISTING, P FOR A PAPER LISTING";LIS$
8600 CLS
8610 IF TT=1 THEN TTLE$ = "NASCOM PRIME COMMERCIAL CARRIERS"
8620 IF TT=2 THEN TTLE$ = "POINTS OF CONTACT FOR NASCOM"
8630 IF TT=1 THEN VAR1$ = "NPCC"
8640 IF TT=2 THEN VAR1$ = "POC"
8650 X$=DRV$ + "PNASA"
8660 IF LIS$ = "P" THEN 8980
8670 PRINT TTLE$
```

```
8680 PRINT
8690 OPEN "I",#1,X$
8700 K = 1
8710 IF EOF(1) THEN 8950
8720 INPUT #1,DIF$,NAM1F$,BRCH1$,BRCH2$,NAMP1$,PHNO1$,RONO1$
8730 IF DIF$<>VAR1$ THEN 8710
8740 J=1
8750 IF NAMF$ = "Y" THEN PRINT "FIRM:              ";NAM1F$
8760 IF NAMF$ = "Y" THEN J = J + 1
8770 IF NAMP$ = "Y" THEN PRINT "MANAGER:           ";NAMP1$
8780 IF NAMP$ = "Y" THEN J = J + 1
8790 IF BRCH$ = "Y" THEN PRINT "BRANCH:            ";BRCH1$
8800 IF BRCH$ = "Y" THEN J=J+1
8810 IF BRCH2$ = "." THEN GOTO 8840
8820 IF BRCH$ = "Y" THEN PRINT "                   ";BRCH2$
8830 IF BRCH$ = "Y" THEN J=J+1
8840 IF PHNO$ = "Y" THEN PRINT "PHONE NO.          ";PHNO1$
8850 IF PHNO$ = "Y" THEN J=J+1
8860 IF RONO$ = "Y" THEN PRINT "ROUTING NO.        ";RONO1$
8870 IF RONO$ = "Y" THEN J=J+1
8880 PRINT
8890 N=INT(23/J):K=K+1
8900 IF K>N THEN 8920
8910 GOTO 8710
8920 INPUT "ENTER C TO CONTINUE, Q TO QUIT";YY$
8930 IF YY$="Q" THEN 8950
8940 CLS:GOTO 8700
8950 CLOSE
8960 INPUT "PRESS RETURN WHEN READY";VV$
8970 GOTO 8310
8980 REM***********PAPER LISTS**************************
8990 INPUT "POSITION PAPER AND ENTER RETURN";QQ
9000 LPRINT TTLE$
9010 LPRINT:LPRINT
9020 OPEN "I",#1,X$
9030 IF EOF(1) THEN 9150
9040 INPUT #1,DIF$,NAM1F$,BRCH1$,BRCH2$,NAMP1$,PHNO1$,RONO1$
9050 IF VAR1$="ALL" THEN 9070
9060 IF DIF$<>VAR1$ THEN 9030
9070 IF NAMF$="Y" THEN LPRINT "     NAME:          ";NAM1F$
9080 IF NAMP$="Y" THEN LPRINT "     MANAGER:       ";NAMP1$
9090 IF BRCH$="Y" THEN LPRINT "     BRANCH:        ";BRCH1$
9100 IF BRCH$="Y" THEN LPRINT "                    ";BRCH2$
9110 IF PHNO$="Y" THEN LPRINT "     PHONE NO.:     ";PHNO1$
9120 IF RONO$="Y" THEN LPRINT "     ROUTING NO.:   ";RONO1$
9130 LPRINT:LPRINT
9140 GOTO 9030
```

```
9150 CLOSE
9160 INPUT "PRINTING IS COMPLETE.  PRESS RETURN WHEN READY";WW$
9170 GOTO 8310
9180 REM******************INDUSTRY EOC*****************
9190 CLS
9200 PRINT
9210 INPUT "ENTER S FOR SCREEN LISTING, P FOR A PAPER LISTING";L$
9220 IF L$ ="P" THEN 9480
9230 CLS
9240 PRINT
9250 PRINT "     Emergency Operations Centers"
9260 PRINT:PRINT
9270 OPEN "I",#1,DRV$ + "IEOC"
9280 K=1
9290 J=3
9300 IF EOF(1) THEN 9450
9310 INPUT#1,AGC$,LCT$,SPV$,DDD$
9320 PRINT " AGENCY          : ";AGC$:J=J+1
9330 PRINT " LOCATION        : ";LCT$:J=J+1
9340 PRINT " SUPERVISOR      : ";SPV$:J=J+1
9350 PRINT " DDD NO.         : ";DDD$:J=J+1
9360 PRINT:PRINT
9370 N=INT(37/J)
9380 K=K+1
9390 IF K>N THEN 9410
9400 GOTO 9300
9410 INPUT "ENTER C TO CONTINUE, OR Q TO QUIT";Y$
9420 IF Y$= "Q" THEN 9450
9430 CLS
9440 GOTO 9280
9450 CLOSE
9460 INPUT "PRESS RETURN WHEN READY";V$
9470 GOTO 4000
9480 REM*******PAPER LISTS*******
9490 INPUT "POSITION PAPER AND ENTER RETURN";QQ
9500 LPRINT"EMERGENCY OPERATIONS CENTERS"
9510 LPRINT:LPRINT
9520 OPEN "I",#1,DRV$ + "IEOC"
9530 IF EOF(1) THEN 9610
9540 INPUT #1,AGC$,LCT$,SPV$,DDD$
9550 LPRINT:LPRINT
9560 LPRINT"         AGENCY:";AGC$
9570 LPRINT"       LOCATION:";LOC$
9580 LPRINT"     SUPERVISOR:";SPV$
9590 LPRINT"         DDD NO:";DDD$
9600 LPRINT
9610 GOTO 9530
```

```
9620 CLOSE
9630 INPUT"PRINTING IS COMPLETE.  PRESS RETURN:";QQ
9640 GOTO 4000
```

Appendix E

NCSDAM.BAS Listing

```
01 COMMON DRV$
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C: LASTFILE$=" "
35 GOTO 4000
250 PAD$="           Main  Menu                "
260 GOSUB 650
270 TES=0
280 GOSUB 580
290 REM*************************************************
300 PRINT
310 PRINT"  1. P.O.C. Lists                        "
320 PRINT"  2. Emergency Activation Procedures     "
330 PRINT"  3. Network Status Monitoring           "
340 PRINT"  4. Damage Assessment                   "
350 PRINT"  5. Resolution of Claim                 "
360 PRINT"  6. Zooming                             "
370 PRINT"  7. Word Processing (WordStar)          "
380 PRINT"  8. NSC Processing Module               "
390 PRINT"  9. QUIT                                "
400 COLOR 14,0,0: PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
```

```
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM************************************************************
660 REM*                                                          *
670 REM*   This Subroutine produces the logo box for the menus.   *
680 REM*                                                          *
690 REM************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
```

```
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ**************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM************FILE PLOT***************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
```

```
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
```

```
2000 LINE (X,Y-2)-(X+4,Y+2):LINE -(X-4,Y-1):LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10):LINE -(X+20,Y):LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y):LINE -(X+6,Y-6):LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
```

```
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
```

```
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
```

```
3410 SHELL "WS
3420 CLS
3430 GOTO 250
4000 DEFDBL N,C,M
4010 REM***********************************************
4020 PAD$="         Damage Assessment          "
4030 GOSUB 650
4040 TES=0
4050 GOSUB 580
4060 PRINT
4070 PRINT"    THIS MODULE ALLOWS THE USER TO    "
4080 PRINT"    REPORT DAMAGE IN TWO WAYS:        "
4090 PRINT
4100 PRINT"    1. Observed Entries:              "
4110 PRINT"    2. Predictive Entries:            "
4120 PRINT"    3. QUIT.                          "
4130 PRINT
4140 COLOR 14,0,0:INPUT"ENTER OPTION DESIRED";T
4150 DEFDBL N,C,M
4160 CLS
4170 IF T=3 THEN 250
4180 CLS
4190 IF T=2 THEN 5130
4200 IF T=1 THEN 4220
4210 GOTO 4010
4220 REM***********************************************
4230 CLS:WIDTH 80
4240 PRINT
4250 PRINT"            OBSERVED DAMAGE           "
4260 PRINT
4270 PRINT"  Use this option to enter damage data"
4280 PRINT" for individual sites and to  confirm "
4290 PRINT" predicted damage. Enter the following"
4300 PRINT" data for each damage site.           "
4310 PRINT
4320 PRINT"       SELECT ONE OF THE FOLLOWING SYSTEMS"
4330 PRINT
4340 PRINT"            1. FTS             4. MCI Microwave"
4350 PRINT"            2. AUTOVON         5. MCI Fiber Optics"
4360 PRINT"            3. AUTODIN         6. All Critical Facilities"
4370 PRINT"                               7. QUIT"
4380 PRINT
4390 INPUT"          ENTER OPTION DESIRED:";OP
4400 IF OP=2 THEN V$=DRV$ + "VONNODE"
4410 IF OP=1 THEN V$=DRV$ + "FTSNODE"
4420 IF OP=3 THEN V$=DRV$ + "DINNODE"
4430 IF OP=4 THEN V$=DRV$ + "MCINODE"
```

```
4440 IF OP=5 THEN V$=DRV$ + "MFONODE"
4450 IF OP=6 THEN V$=DRV$ + "CRITFAX"
4460 IF OP=7 THEN 4010
4470 IF OP<1 OR OP>7 THEN 4220
4480 CLS
4490 IF DRV$>"B:" THEN 4510
4495 IF OP=2 OR OP=3 THEN PRINT"ENTER DISC NO. S-18 IN THE"
4500 IF OP=2 OR OP=3 THEN INPUT"B-DRIVE AND ENTER RETURN";D$
4510 IF OP=2 OR OP=3 THEN 4540
4520 IF DRV$>"B:" THEN 4540
4525 PRINT"ENTER DISC NO. S-17 IN THE"
4530 INPUT"B-DRIVE AND ENTER RETURN";D$
4540 RESET
4550 CLS:WIDTH 80
4560 PRINT
4570 PRINT
4580 PRINT
4590 I=1
4600 INPUT"      FACILITY DAMAGED. (Enter 7-digt code or 0 to quit)";CODES(I)
4610 IF CODES(I)=0 THEN 4010
4620 PRINT
4630 PRINT
4640 INPUT"      SEVERITY CODE. (2 = impaired, 3 = destroyed)";S(I)
4650 PRINT
4660 PRINT
4670 PRINT"      SITE CODE ENTERED: ";CODES(I);",SEVERITY CODE: ";S(I)
4680 PRINT
4690 PRINT
4700 INPUT"IS DATA CORRECT? Y OR N";AN$
4710 IF AN$="N" THEN CLS
4720 IF AN$="N" THEN 4600
4730 CLS
4740 PRINT
4750 INPUT"DO YOU WANT ANOTHER SITE? Y OR N";AN$
4760 IF AN$="Y" THEN CLS
4770 IF AN$="Y" THEN I=I+1
4780 IF AN$="Y" THEN 4600
4790 WIDTH 40:CLS
4800 PRINT
4810 PRINT"STAND BY, SYSTEM PROCESSING"
4820 FOR J=1 TO I
4830 KOUNT(J)=0
4840 NEXT J
4850 OPEN "O",#1,DRV$ + "JUNK"
4860 OPEN "I",#2,V$
4870 IF EOF(2) THEN 4950
4880 INPUT #2,R,C,A$,X5,Y5,X9,Y9,STAT,SYS$,NODE
```

```
4890 FOR J=1 TO I STEP 1
4900 IF CODES(J)=NODE THEN STAT=S(J)*10
4910 IF CODES(J)=NODE THEN KOUNT(J)=1
4920 NEXT J
4930 PRINT #1,R;",";"C;",";"A$;",";"X5;",";"Y5;",";"X9;",";"Y9;",";"STAT;",";"SYS$;",";"NODE
4940 GOTO 4870
4950 CLOSE
4960 FOR J=1 TO I
4970 IF KOUNT(J)=1 THEN 5040
4980 CLS
4990 PRINT
5000 PRINT
5010 PRINT"Site Code ";CODES(J);" is not in the file."
5020 PRINT"Refer to facility listing for correct"
5030 INPUT"code.  Enter RETURN to continue";AN$
5040 NEXT J
5050 CLS
5060 KILL V$
5070 NAME DRV$ + "JUNK" AS V$
5080 PRINT
5090 INPUT"DO YOU WANT ANOTHER SYSTEM? Y OR N";AN$
5100 IF AN$="Y" THEN CLS
5110 IF AN$="Y" THEN 4220
5120 GOTO 4010
5130 REM*********************************************
5140 CLS
5150 ANSWER$=""
5160 PRINT"        PREDICTIVE DAMAGE"
5170 PRINT
5180 PRINT
5190 PRINT"        can be done two ways:"
5200 PRINT
5210 PRINT" 1.  Nuclear or Other Device"
5220 PRINT"     - using circular destruction areas"
5230 PRINT
5240 PRINT" 2.  Natural or Manmade Disaster"
5250 PRINT"     - using rectangular disaster areas"
5260 PRINT
5270 PRINT" 3.  or QUIT"
5280 PRINT
5290 INPUT"ENTER YOUR CHOICE";CH
5300 IF CH=1 THEN 5340
5310 IF CH=2 THEN 5750
5320 IF CH=3 THEN 4010
5330 GOTO 5140
5340 OPEN "O",#10,"TEMPSITE"
5350 CLS
```

```
5360 PRINT"     NUCLEAR OR OTHER DEVICE"
5370 PRINT
5380 PRINT
5390 PRINT"   Use this  option  to  predict damage"
5400 PRINT"from  a  nuclear  detonation  or  other"
5410 PRINT"massive destruction devices. Two levels"
5420 PRINT"of damage  can  be  accomodated:  total"
5430 PRINT"destruction    and    impairment.     The"
5440 PRINT"procedure uses radius from  the  center"
5450 PRINT"point   of   detonation   to  calculate"
5460 PRINT"destruction or impairment."
5470 PRINT "     ENTER the following data for"
5480 PRINT"         each incident:"
5490 PRINT
5500 PRINT
5510 INPUT"SITE OF INCIDENT:";SITE$
5520 PRINT
5530 INPUT"            Latitude: ";LAT
5540 INPUT"           Longitude: ";LON
5550 PRINT
5560 INPUT"Radius of total destruction(miles)";R1
5570 INPUT"       Radius of impairment(miles)";R2
5580 CLS
5590 PRINT
5600 PRINT
5610 PRINT"        DATA ENTERED:"
5620 PRINT
5630 PRINT"  Site of incident: ";SITE$
5640 PRINT"  Latitude: ";LAT;"   Longitude: ";LON
5650 PRINT"  Radius of total destruction: ";R1
5660 PRINT"  Radius of impairment: ";R2
5670 PRINT
5680 INPUT"                  DATA OK (Y/N)";ANS$
5690 IF ANS$="N" THEN 5510:IF ANS$<>"Y" THEN 5580
5700 PRINT #10,SITE$;",";LAT;LON;R1;R2
5710 CLS:PRINT:INPUT"DO YOU WANT TO ENTER ANOTHER SITE";AN$
5720 IF AN$="Y" THEN 5510:IF AN$<>"N" THEN 5710
5730 CLOSE #10
5740 GOTO 6160
5750 OPEN "O",#10,"TEMPSITE"
5760 CLS
5770 PRINT"    NATURAL OR OTHER DISASTER"
5780 PRINT
5790 PRINT
5800 PRINT"  Use this option to predict damage"
5810 PRINT" from  a natural disaster  or other"
5820 PRINT" manmade  disasters.  The procedure"
```

```
5830 PRINT" uses latitude  and longitude from "
5840 PRINT" two points to calculate impairment"
5850 PRINT" in  a rectangular  area.  The two "
5860 PRINT" points  used  are the  upper left "
5870 PRINT" corner and the lower right corner."
5880 PRINT" Enter the following  data for each"
5890 PRINT" incident."
5900 PRINT
5910 INPUT"press RETURN when ready";RET$
5920 WIDTH 80:CLS
5930 PRINT
5940 INPUT"SITE OF INCIDENT:";SITE$
5950 PRINT
5960 INPUT"   Enter Latitude for upper left corner: ";LAT1
5970 INPUT"   Enter Longitude for upper left corner: ";LON1
5980 PRINT
5990 INPUT"   Enter Latitude for lower right corner: ";LAT2
6000 INPUT"   Enter Longitude for lower right corner: ";LON2
6010 CLS
6020 PRINT
6030 PRINT
6040 PRINT"      DATA ENTERED:"
6050 PRINT
6060 PRINT"  Site of incident:  ";SITE$
6070 PRINT"  Upper left corner - lat.: "LAT1;" lon.: "LON1
6080 PRINT"  Lower right corner - lat.: "LAT2;" lon.: "LON2
6090 PRINT
6100 INPUT"                DATA OK (Y OR N)";ANS$
6110 IF ANS$="N" THEN 5920:IF ANS$<>"Y" THEN 6010
6120 PRINT #10,SITE$;","LAT1;LON1;LAT2;LON2
6130 CLS:PRINT:INPUT"DO YOU WANT TO ENTER ANOTHER SITE";AN$
6140 IF AN$="Y" THEN 5920:IF AN$<>"N" THEN 6130
6150 CLOSE #10
6160 CLS:WIDTH 80
6170 PRINT
6180 PRINT
6190 PRINT
6200 PRINT"THE FOLLOWING SYSTEM OPTIONS"
6210 PRINT"ARE AVAILABLE:"
6220 PRINT
6230 PRINT" 1.  FTS                5. MCI Fiber Optics"
6240 PRINT" 2.  AUTOVON            6. FAA HF Radio Network"
6250 PRINT" 3.  AUTODIN            7. All Critical Facilities"
6260 PRINT" 4.  MCI Microwave      8. QUIT"
6270 PRINT
6280 INPUT"                      ENTER OPTION DESIRED ";OPT
6290 IF OPT=8 THEN KILL "TEMPSITE"
```

```
6300 IF OPT=8 AND ANSWER$<>"" THEN KILL "SITETEMP"
6310 IF OPT=8 THEN 4010
6320 IF OPT=2 THEN 6460
6330 IF OPT=1 THEN 6400
6340 IF OPT=3 THEN 6430
6350 IF OPT=4 THEN 6490
6360 IF OPT=5 THEN 6520
6370 IF OPT=6 THEN 6550
6380 IF OPT=7 THEN 6580
6390 GOTO 6160
6400 V$=DRV$ + "FTSNODE"
6410 TEM$="FTS"
6420 GOTO 6600
6430 V$=DRV$ + "DINNODE"
6440 TEM$="AUTODIN"
6450 GOTO 6600
6460 V$=DRV$ + "VONNODE"
6470 TEM$="AUTOVON"
6480 GOTO 6600
6490 V$=DRV$ + "MCINODE"
6500 TEM$="MCI MW"
6510 GOTO 6600
6520 V$=DRV$ + "MFONODE"
6530 TEM$="MCI FO"
6540 GOTO 6600
6550 V$=DRV$ + "FAANODE"
6560 TEM$="FAA HF"
6570 GOTO 6600
6580 V$=DRV$ + "CRITFAX"
6590 TEM$="CRITICAL"
6600 PRINT
6610 CLS
6620 PRINT
6630 RESET
6635 IF DRV$>"B:" THEN 6680
6640 DISK$=" S-17 "
6650 IF OPT=2 OR OPT=3 THEN DISK$=" S-18 "
6660 PRINT"ENTER DISC NO.";DISK$;"IN THE "
6670 INPUT"B-DRIVE AND ENTER RETURN";D$
6680 RESET
6690 CLS
6700 PRINT
6710 PRINT
6720 INPUT"WHICH REGION (1-10), 0 FOR US LEVEL";R
6730 IF R>10 THEN 6720
6740 IF CH=2 THEN 6930
6750 OPEN "I",#7,"TEMPSITE"
```

```
6760 OPEN "O",#8,"SITETEMP"
6770 IF EOF(7) THEN 6910
6780 INPUT #7,SITE$,LAT,LON,R1,R2
6790 OPEN "I",#1,"CRITSCAL"
6800 IF EOF(1) THEN 6850
6810 INPUT #1,SCA,REN
6820 IF REN<>R THEN 6800
6830 RS1=CINT(SCA*R1)
6840 RS2=CINT(SCA*R2)
6850 CLOSE #1
6860 GOSUB 2530
6870 IF R>10 THEN R=R MOD 10
6880 XD=2*XD: YD=240-YD: IF SET=20 THEN 6770
6890 PRINT #8,SITE$;",";LAT;LON;R1;R2;RS1;RS2;XD;YD;SET
6900 GOTO 6770
6910 CLOSE
6920 GOTO 7040
6930 OPEN "I",#8,"TEMPSITE"
6940 OPEN "O",#7,"SITETEMP"
6950 IF EOF(8) THEN 7030
6960 INPUT #8,SITE$,LAT1,LON1,LAT2,LON2
6970 LAT=LAT1: LON=LON1: GOSUB 2530
6980 XD1=2*XD: YD1=240-YD: IF SET=20 THEN XD1=0: IF SET=20 THEN YD1=0
6990 LAT=LAT2: LON=LON2: GOSUB 2530
7000 XD2=2*XD: YD2=240-YD: IF SET=20 THEN XD2=639: IF SET=20 THEN YD2=249
7010 PRINT #7,SITE$;",";XD1;YD1;XD2;YD2
7020 GOTO 6950
7030 CLOSE
7040 WIDTH 40
7050 PRINT
7060 N$="RELAX"
7070 GOSUB 1460
7080 LOCATE 1,1: PRINT"STAND BY SYSTEM PROCESSING"
7090 COUNT=0
7100 IF CH=2 THEN 7380
7110 OPEN "I",#1,V$
7120 OPEN "O",#2,DRV$ + "TEMP"
7130 IF EOF(1) THEN 7360
7140 INPUT #1,ROW,COL,A$,X5,Y5,X9,Y9,STAT,SYS$,NODE
7150 IF R=0 THEN 7180
7160 N=NODE-INT(NODE/100)*100
7170 IF R<>N THEN 7130
7180 IF ROW=0 OR COL=0 THEN 7130
7190 OPEN "I",#6,"SITETEMP"
7200 IF EOF(6) THEN 7330
7210 INPUT #6,SITE$,LAT,LON,R1,R2,RS1,RS2,XD,YD,SET
7220 IF STAT=30 OR STAT=31 THEN 7330
```

```
7230 IF R=0 THEN D=SQR(((XD-X5)/2)  2+(YD-Y5)   2)
7240 IF R=0 THEN 7260
7250 D=SQR(((XD-X9)/2)  2+(YD-Y9)   2)
7260 QS=STAT-INT(STAT/10)*10
7270 IF D<=RS2 THEN COUNT=1
7280 IF D<=RS1 AND QS=0 THEN STAT=30
7290 IF D<=RS1 AND QS=1 THEN STAT=31
7300 IF D<=RS2 AND D>RS1 AND QS=0 THEN STAT=20
7310 IF D<=RS2 AND D>RS1 AND QS=1 THEN STAT=21
7320 GOTO 7200
7330 CLOSE #6
7340 PRINT #2,ROW;","COL;","A$;","X5;","Y5;","X9;","Y9;","STAT;","SYS$;","NODE
7350 GOTO 7130
7360 CLOSE
7370 GOTO 7580
7380 OPEN "I",#1,V$
7390 OPEN "O",#2,DRV$ + "TEMP"
7400 IF EOF(1) THEN 7570
7410 INPUT #1,LAT,LON,A$,X5,Y5,X9,Y9,STAT,SYS$,NODE
7420 IF R=0 THEN 7450
7430 N=NODE-INT(NODE/100)*100
7440 IF N<>R THEN 7400
7450 IF LAT=0 OR LON=0 THEN 7400
7460 OPEN "I",#6,"TEMPSITE"
7470 IF EOF(6) THEN 7540
7480 INPUT #6,SITE$,LAT1,LON1,LAT2,LON2
7490 IF LAT>LAT1 OR LAT<LAT2 THEN 7540
7500 IF LON>LON1 OR LON<LON2 THEN 7540
7510 STAT=20
7520 COUNT=1
7530 GOTO 7470
7540 CLOSE #6
7550 PRINT #2,LAT;","LON;","A$;","X5;","Y5;","X9;","Y9;","STAT;","SYS$;","NODE
7560 GOTO 7400
7570 CLOSE
7580 IF COUNT=0 THEN 8820
7590 OPEN "I",#1,DRV$ + "TEMP"
7600 OPEN "O",#2,DRV$ + "CRITNODE"
7610 IF EOF(1) THEN 7770
7620 INPUT #1,ROW,COL,A$,X5,Y5,X9,Y9,STAT,SYS$,NODE
7630 IF R<>0 THEN 7660
7640 PRINT #2, 11;","X5;","Y5;","0;","0;","0
7650 GOTO 7610
7660 IF STAT=30 OR STAT=31 THEN 7700
7670 IF STAT=20 OR STAT=21 THEN 7740
7680 PRINT #2,11;","X9;","Y9;","0;","0;","0
7690 GOTO 7610
```

```
7700 PRINT #2,6;","X9-6;","Y9-3;","0;","0;","
7710 PRINT #2,15;","X9+6;","Y9+3;","0;","0;","0
7720 PRINT #2,14;","X9;","Y9;","0;","0;","0
7730 GOTO 7610
7740 PRINT #2,0;","X9;","Y9;","0;","0;","0
7750 PRINT #2,2;","X9;","Y9;","6;","0;","6.28
7760 GOTO 7610
7770 CLOSE
7780 IF R=0 THEN N$="USAOUT.TXT"
7790 IF R=1 THEN N$=DRV$ + "CRITR1"
7800 IF R=2 OR R=22 THEN N$=DRV$ + "CRITR2"
7810 IF R=3 THEN N$=DRV$ + "CRITR3"
7820 IF R=4 THEN N$=DRV$ + "CRITR4"
7830 IF R=5 THEN N$=DRV$ + "CRITR5"
7840 IF R=6 THEN N$=DRV$ + "CRITR6"
7850 IF R=7 THEN N$=DRV$ + "CRITR7"
7860 IF R=8 THEN N$=DRV$ + "CRITR8"
7870 IF R=9 OR R=99 THEN N$=DRV$ + "CRITR9"
7880 IF R=10 OR R=101 THEN N$=DRV$ + "CRITR10"
7890 SITE$=" "
7900 IF CH=2 THEN 7990
7910 OPEN "I",#4,"SITETEMP"
7920 IF EOF(4) THEN 7970
7930 IF SITE$<>" " THEN SITE$=SITE$+" AND "
7940 INPUT #4,NSITE$,LAT,LON,R1,R2,RS1,RS2,XD,YD,SET
7950 SITE$=SITE$+NSITE$
7960 GOTO 7920
7970 CLOSE #4
7980 GOTO 8060
7990 OPEN "I",#4,"TEMPSITE"
8000 IF EOF(4) THEN 8050
8010 IF SITE$<>" " THEN SITE$=SITE$=" AND "
8020 INPUT #4,NSITE$,LAT1,LON1,LAT2,LON2
8030 SITE$=SITE$+NSITE$
8040 GOTO 8000
8050 CLOSE #4
8060 CLS
8070 WIDTH 80:SCREEN 2
8090 PRINT "          DAMAGE TO ";TEM$;" COMMUNICATIONS DUE TO INCIDENT(S) AT"
8100 PRINT "          ";SITE$
8080 GOSUB 1460:LOCATE 1,1
8110 N$=DRV$ + "CRITNODE"
8120 GOSUB 1460
8130 IF CH=2 THEN 8230
8140 IF SET = 20 THEN 6600
8150 OPEN "I",#5,"SITETEMP"
8160 IF EOF(5) THEN 8210
```

```
8170 INPUT #5,NSITE$,LAT,LON,R1,R2,RS1,RS2,XD,YD,SET
8180 CIRCLE (XD,YD),(RS1*2),,0,6.28,1/2
8190 CIRCLE (XD,YD),(RS2*2),,0,6.28,1/2
8200 GOTO 8160
8210 CLOSE #5
8220 GOTO 8290
8230 OPEN "I",#5,"SITETEMP"
8240 IF EOF(5) THEN 8280
8250 INPUT #5,NSITE$,X1,Y1,X2,Y2
8260 LINE (X1,Y1)-(X2,Y2),,B
8270 GOTO 8240
8280 CLOSE #5
8290 LOCATE  23,1
8300 INPUT"DO YOU WANT TO SEE A LISTING OF IMPAIRED AND/OR DAMAGED FACILITIES?
      Y OR N";ANS$
8310 IF ANS$="N" THEN 8730
8320 SCREEN 0:WIDTH 80:COLOR 14,0,0
8330 INPUT"ENTER S FOR A SCREEN LISTING, P FOR A PAPER LISTING";LT$
8340 IF LT$="P" THEN 8570
8350 CLS
8360 PRINT"          DAMAGE TO ";TEM$;" COMMUNICATIONS DUE TO INCIDENT(S) AT"
8370 PRINT"          ";SITE$
8380 PRINT
8390 PRINT"  LATITUDE     LONGITUDE    FACILITY         TYPE
      STATUS  CODE"
8400 PRINT
8410 K=0
8420 OPEN "I",#1,DRV$ + "TEMP"
8430 IF EOF(1) THEN 8530
8440 INPUT #1,ROW,COL,A$,X5,Y5,X9,Y9,STAT,SYS$,NODE
8450 IF INT(STAT/10)=1 THEN 8430
8460 IF INT(STAT/10)=2 THEN PRINT TAB(4);ROW;TAB(17);COL;TAB(28);A$;TAB(46);
      SYS$;TAB(57);"IMPAIRED";TAB(70);NODE
8470 IF INT(STAT/10)=3 THEN PRINT TAB(4);ROW;TAB(17);COL;TAB(28);A$;TAB(46);
      SYS$;TAB(57);"DESTROYED";TAB(70);NODE
8480 K=K+1
8490 IF K=15 THEN PRINT
8500 IF K=15 THEN INPUT"ENTER RETURN TO CONTINUE ";C$
8510 IF K=15 THEN K=0
8520 GOTO 8430
8530 PRINT
8540 INPUT"ENTER RETURN TO CONTINUE";C$
8550 CLOSE
8560 IF LT$="S" THEN 8730
8570 CLS
8580 INPUT"POSITION PAPER AND ENTER RETURN";C$
8590 LPRINT"          DAMAGE TO ";TEM$;" COMMUNICATIONS DUE TO INCIDENT(S) AT"
```

```
8600 LPRINT"          ";SITE$
8610 LPRINT
8620 LPRINT"  LATITUDE     LONGITUDE    FACILITY          TYPE
      STATUS   CODE"
8630 LPRINT
8640 OPEN "I",#1,DRV$ + "TEMP"
8650 IF EOF(1) THEN 8720
8660 INPUT #1,ROW,COL,A$,X5,Y5,X9,Y9,STAT,SYS$,NODE
8670 IF INT(STAT/10)=1 THEN 8650
8680 IF INT(STAT/10)=2 THEN STA$="IMPAIRED"
8690 IF INT(STAT/10)=3 THEN STA$="DESTROYED"
8700 LPRINT TAB(4);ROW;TAB(17);COL;TAB(28);A$;TAB(46);SYS$;TAB(57);STA$;
      TAB(70);NODE
8710 GOTO 8650
8720 CLOSE
8730 SCREEN 0:CLS:COLOR 14,0,0
8740 INPUT"REVIEW <M>AP, RETURN TO M<E>NU, ANOTHER <R>EGION, OR ANOTHER
      <S>YSTEM";ANSWER$
8750 IF ANSWER$="M" THEN 7780
8760 IF ANSWER$="E" THEN KILL "TEMPSITE"
8770 IF ANSWER$="E" THEN KILL "SITETEMP"
8780 IF ANSWER$="E" THEN 4010
8790 IF ANSWER$="R" THEN 6690
8800 IF ANSWER$="S" THEN 6160
8810 GOTO 8740
8820 CLS:WIDTH 40
8830 PRINT
8840 PRINT
8850 IF R<>0 THEN 8920
8860 PRINT"THERE ARE NO FACILITIES DAMAGED BY THE"
8870 PRINT"INCIDENT(S) AT "
8880 PRINT"        ";SITE$
8890 PRINT
8900 INPUT"ENTER RETURN TO CONTINUE";S$
8910 GOTO 4010
8920 PRINT"  THERE ARE NO FACILITIES IN REGION ";R
8930 PRINT" DAMAGED BY THE INCIDENT(S) AT"
8940 PRINT SITE$
8950 PRINT
8960 INPUT"ENTER RETURN TO CONTINUE";S$
8970 GOTO 6160
8980 END
```

Appendix F

NCSACT.BAS Listing

```
01 COMMON DRV$
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C: LASTFILE$=" "
35 GOTO 4000
250 PAD$="           Main  Menu                "
260 GOSUB 650
270 TES=0
280 GOSUB 580
290 REM*************************************************
300 PRINT
310 PRINT"  1. P.O.C. Lists                          "
320 PRINT"  2. Emergency Activation Procedures       "
330 PRINT"  3. Network Status Monitoring             "
340 PRINT"  4. Damage Assessment                     "
350 PRINT"  5. Resolution of Claim                   "
360 PRINT"  6. Zooming                               "
370 PRINT"  7. Word Processing (WordStar)            "
380 PRINT"  8. NSC Processing Module                 "
390 PRINT"  9. QUIT                                  "
400 COLOR 14,0,0: PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
```

```
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM*************************************************************
660 REM*                                                           *
670 REM*   This Subroutine produces the logo box for the menus.    *
680 REM*                                                           *
690 REM*************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
```

```
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ*************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM************FILE PLOT****************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
```

```
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
```

```
2000 LINE (X,Y-2)-(X+4,Y+2): LINE -(X-4,Y-1): LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10): LINE -(X+20,Y): LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y): LINE -(X+6,Y-6): LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
```

```
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
```

```
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
```

```
3410 SHELL "WS
3420 CLS
3430 GOTO 250
4000 REM ************************************************************
4010 PAD$="   Emergency Activation Procedure   "
4020 GOSUB 650
4030 TES=0
4040 GOSUB 580
4050 PRINT
4060 PRINT"1. Conditions for Activation of the NCS"
4070 PRINT"2. OSTP Telecommunications Orders      "
4080 PRINT"3. NCS Telecommunications Instructions "
4090 PRINT"4. NCS Emergency Recall List           "
4100 PRINT"5. Activation/Deployment Procedures    "
4110 PRINT"   for Emergency Management Teams      "
4120 PRINT"6. QUIT                                "
4130 PRINT
4140 COLOR 14,0,0:PRINT"     ENTER OPTION DESIRED ";
4150 INPUT M:COLOR 15
4160 CLS
4170 IF M=6 THEN 250
4175 IF DRV$>"B:" THEN 4200
4180 PRINT"ENTER DISC NO. 18 IN THE "
4190 INPUT"B-DRIVE AND ENTER RETURN";B$
4200 WIDTH 80
4210 IF M=1 THEN 4280
4220 IF M=2 THEN GOSUB 1040
4230 IF M=3 THEN GOSUB 1040
4240 IF M=4 THEN GOSUB 1040
4250 IF M=5 THEN GOSUB 1040
4260 IF M=6 THEN 250
4270 GOTO 4010
4280 NUM=0
4290 CLS
4300 X$=DRV$ + "CONDACTN"
4310 SET=0
4320 GOSUB 1090
4330 GOTO 4000
4340 END
```

Appendix G

NCSNSC.BAS Listing

```
01 COMMON DRV$
20 DIM CODES(100),S(100),KOUNT(100)
30 DEFDBL N,M,C:LASTFILE$=" "
35 GOTO 4000
250 PAD$="           Main  Menu                "
260 GOSUB 650
270 TES=0
280 GOSUB 580
290 REM*************************************************
300 PRINT
310 PRINT"  1. P.O.C. Lists                          "
320 PRINT"  2. Emergency Activation Procedures       "
330 PRINT"  3. Network Status Monitoring             "
340 PRINT"  4. Damage Assessment                     "
350 PRINT"  5. Resolution of Claim                   "
360 PRINT"  6. Zooming                               "
370 PRINT"  7. Word Processing (WordStar)            "
380 PRINT"  8. NSC Processing Module                 "
390 PRINT"  9. QUIT                                  "
400 COLOR 14,0,0:PRINT
410 PRINT"     ENTER OPTION DESIRED";
420 INPUT T
430 IF T=6 OR T=7 THEN 460
440 IF T=LASTT THEN 4000
450 LASTT=T
460 PRINT
470 WIDTH 80
480 IF T=1 THEN CHAIN "NCSPOC"
490 IF T=2 THEN CHAIN "NCSACT"
500 IF T=3 THEN CHAIN "NCSSTAT"
510 IF T=4 THEN CHAIN "NCSDAM"
520 IF T=5 THEN CHAIN "NCSCLAIM"
530 IF T=6 THEN RUN "NCSZOOM"
540 IF T=7 THEN 3400
550 IF T=8 THEN CHAIN "NCSNSC"
560 IF T=9 THEN SYSTEM
570 GOTO 250
```

```
580 LOCATE 10,4:PRINT" DATE ":LOCATE 10,29:PRINT" TIME "
600 LOCATE 11,2
610 PRINT DATE$
620 LOCATE 11,28
630 PRINT TIME$
640 RETURN
650 REM*****************************************************************
660 REM*                                                               *
670 REM*   This Subroutine produces the logo box for the menus.        *
680 REM*                                                               *
690 REM*****************************************************************
700 SCREEN 0:WIDTH 40:CLS
710 PRINT
720 COLOR 14,1,0
730 PRINT CHR$(201);
740 FOR I=1 TO 36
750 PRINT CHR$(205);
760 NEXT I
770 PRINT CHR$(187)
780 PRINT CHR$(186);
790 FOR I=1 TO 36
800 PRINT" ";
810 NEXT I
820 PRINT CHR$(186)
830 PRINT CHR$(186);
840 PRINT"      NCS EMERGENCY TELECOMM.       ";
850 PRINT CHR$(186)
860 PRINT CHR$(186);
870 PRINT"          MICRO SUBSYSTEM           ";
880 PRINT CHR$(186)
890 PRINT CHR$(186);
900 PRINT PAD$;:PRINT CHR$(186)
910 PRINT CHR$(186);
920 FOR I=1 TO 36
930 PRINT" ";
940 NEXT I
950 PRINT CHR$(186)
960 PRINT CHR$(200);
970 FOR I=1 TO 36
980 PRINT CHR$(205);
990 NEXT I
1000 PRINT CHR$(188)
1010 PAD$="   "
1020 COLOR 14,1,0
1030 RETURN
1040 CLS:WIDTH 80
1050 PRINT"THIS OPTION IS NOT YET AVAILABLE."
```

```
1060 INPUT"PRESS RETURN FOR MENU.";RET$
1070 CLS
1080 RETURN
1090 REM********FILE READ*************************
1100 SCREEN 0:CLS:WIDTH 80
1110 IF SET=0 THEN 1320
1120 I=0
1130 OPEN "I",#1,X$
1140 IF EOF(1) THEN 1280
1150 INPUT #1,K$,A$
1160 IF K$=PASS$ THEN 1180
1170 GOTO 1140
1180 I=I+1
1190 IF I>=20 THEN 1220
1200 PRINT A$
1210 GOTO 1140
1220 PRINT
1230 INPUT"ENTER C TO CONTINUE OR Q TO QUIT";C$
1240 IF C$="Q" THEN 1280
1250 PRINT
1260 I=0
1270 GOTO 1140
1280 CLOSE
1290 PRINT
1300 INPUT"ENTER RETURN TO CONTINUE ";R$
1310 GOTO 1450
1320 OPEN "I",#1,X$
1330 FOR I=1 TO 20
1340 LINE INPUT #1,A$
1350 IF EOF(1) THEN 1420
1360 PRINT A$
1370 NEXT I
1380 PRINT
1390 INPUT"ENTER C TO CONTINUE,Q TO QUIT";B$
1400 IF B$<>"C" AND B$<>"Q" THEN 1390
1410 IF B$="C" THEN 1330
1420 PRINT
1430 INPUT" PRESS RETURN WHEN READY";M$
1440 CLOSE #1
1450 RETURN
1460 REM************FILE PLOT****************
1470 WIDTH 80:SCREEN 2:WINDOW SCREEN (0,0)-(640,250)
1480 OPEN "I",#1,N$
1490 IF EOF(1) THEN 2510
1500 INPUT #1,C,X,Y,Z,S,E
1510 IF C=0 THEN 1760  REM **POINT
1520 IF C=1 THEN 1780  REM **LINE
```

```
1530 IF C=2 THEN 1800  REM **CIRCLE
1540 IF C=3 THEN 1820  REM **CLEAR SCREEN
1550 IF C=4 THEN 1840  REM **CLEAR POINT
1560 IF C=5 THEN 1860  REM **CLEAR CENTER OF CIRCLE
1570 IF C=6 THEN 1880  REM **BOX(UPPER LEFT CORNER)
1580 IF C=7 THEN 1910  REM **BOX (LOWER RIGHT CORNER)
1590 IF C=8 THEN 1930  REM **SATELLITE
1600 IF C=9 THEN 1990  REM **STAR
1610 IF C=10 THEN 2020 REM **EARTH STATION
1620 IF C=11 THEN 2050 REM **CITY (BOX)
1630 IF C=12 THEN 2070 REM **REMOVE CENTER OF CIRCLE
1640 IF C=13 THEN 2090 REM **TELEPHONE SET
1650 IF C=14 THEN 2120 REM **SET UP BLOCK FILLER
1660 IF C=15 THEN 2140 REM **CREATES A FILLED BLOCK
1670 IF C=16 THEN 2160 REM **CREATES A TRIANGLE
1680 IF C=17 THEN 2200 REM **CREATES A BIG TRIANGLE
1690 IF C=18 THEN 2260 REM **CREATES A DIAMOND
1700 IF C=19 THEN 2320 REM **CREATES A LARGE BOX
1710 IF C=20 THEN 2340 REM **WISHBONE
1720 IF C=21 THEN 2410 REM **ASTERISK
1730 IF C=22 THEN 2460 REM **AN  X
1740 IF C=23 THEN 2490 REM **A DASHED LINE
1750 GOTO 1490
1760 PSET (X,Y)
1770 GOTO 1490
1780 LINE -(X,Y)
1790 GOTO 1490
1800 CIRCLE(X,Y),Z,,S,E,13/32
1810 GOTO 1490
1820 CLS
1830 GOTO 1490
1840 CLS
1850 GOTO 1490
1860 CLS
1870 GOTO 1490
1880 X1=X
1890 Y1=Y
1900 GOTO 1490
1910 LINE (X1,Y1)-(X,Y),,B
1920 GOTO 1490
1930 CIRCLE (X,Y),10,,0,6.28,1/2
1940 LINE (X-20,Y)-(X-10,Y)
1950 LINE (X,Y-5)-(X,Y-10)
1960 LINE (X+10,Y)-(X+20,Y)
1970 LINE (X,Y+5)-(X,Y+10)
1980 GOTO 1490
1990 LINE (X,Y-2)-(X-4,Y+2):LINE -(X+4,Y-1)
```

```
2000 LINE (X,Y-2)-(X+4,Y+2):LINE -(X-4,Y-1):LINE -(X+4,Y-1)
2010 GOTO 1490
2020 LINE (X,Y)-(X+10,Y-10):LINE -(X+20,Y):LINE -(X,Y)
2030 CIRCLE (X+20,Y-15),14,,2.36,5.5
2040 GOTO 1490
2050 LINE (X-2,Y-1)-(X+2,Y+1),,B
2060 GOTO 1490
2070 CLS
2080 GOTO 1490
2090 LINE (X,Y)-(X+12,Y):LINE -(X+6,Y-6):LINE -(X,Y)
2100 CIRCLE (X+6,Y-6),6,,0,3.14
2110 GOTO 1490
2120 PAINT (X,Y),1
2130 GOTO 1490
2140 LINE (X1,Y1)-(X,Y),,B
2150 GOTO 1490
2160 LINE (X-2,Y)-(X+2,Y)
2170 LINE (X-4,Y+1)-(X+4,Y+1)
2180 PSET (X,Y-1)
2190 GOTO 1490
2200 PSET (X,Y-2)
2210 LINE (X-2,Y-1)-(X+2,Y-1)
2220 LINE (X-4,Y)-(X+4,Y)
2230 LINE (X-6,Y+1)-(X+6,Y+1)
2240 LINE (X-8,Y+2)-(X+8,Y+2)
2250 GOTO 1490
2260 PSET (X,Y)
2270 PSET (X-2,Y)
2280 PSET (X+2,Y)
2290 PSET (X,Y-1)
2300 PSET (X,Y+1)
2310 GOTO 1490
2320 LINE (X-4,Y-2)-(X+4,Y+2),,B
2330 GOTO 1490
2340 PSET (X,Y-2)
2350 PSET (X,Y-1)
2360 PSET (X,Y)
2370 LINE (X-2,Y+1)-(X+2,Y+1)
2380 PSET (X-4,Y+2)
2390 PSET (X+4,Y+2)
2400 GOTO 1490
2410 LINE (X+4,Y-2)-(X-4,Y+2)
2420 LINE (X-4,Y-2)-(X+4,Y+2)
2430 LINE (X-4,Y)-(X+4,Y)
2440 LINE (X,Y+2)-(X,Y-2)
2450 GOTO 1490
2460 LINE (X+4,Y-2)-(X-4,Y+2)
```

```
2470 LINE (X-4,Y-2)-(X+4,Y+2)
2480 GOTO 1490
2490 LINE-(X,Y),,,50.386
2500 GOTO 1490
2510 CLOSE
2520 RETURN
2530 REM*************LAT/LONG*******************
2540 REM CLS
2550 REGION=R
2560 SET=0
2570 OPEN "I",#1,"BOUNDARY"
2580 IF EOF(1) THEN GOTO 2610
2590 INPUT #1,LATD,LATU,LONR,LONL,REG
2600 IF REGION<>REG THEN 2580
2610 CLOSE #1
2620 IF LAT>LATU OR LAT<LATD THEN 2650
2630 IF LON>LONL OR LON<LONR THEN 2650
2640 GOTO 2680
2650 IF REGION>10 THEN 3380
2660 REGION=R+(R*10)
2670 GOTO 2570
2680 OPEN "I",#2,"LATFILE"
2690 LA1=0
2700 IF EOF(2) THEN 2810
2710 INPUT #2, LA, YVAL,REG
2720 IF REGION<>REG THEN 2700
2730 IF LAT<=LA1 AND LAT>=LA THEN 2770
2740 LA1=LA
2750 YVAL1=YVAL
2760 GOTO 2700
2770 YLOW=YVAL
2780 YHI=YVAL1
2790 LATLOW=LA
2800 LATHI=LA1
2810 CLOSE #2
2820 OPEN "I",#1,"LONFILE"
2830 LON1=0
2840 IF EOF(1) THEN 2920
2850 INPUT #1,LO,C1,C2,REG
2860 IF REGION<>REG THEN 2840
2870 IF LON<=LON1 AND LON>=LO THEN 2920
2880 LON1=LO
2890 C11=C1
2900 C21=C2
2910 GOTO 2840
2920 CLOSE #1
2930 IF R=0 THEN 3070
```

```
2940 XLEFTU=YHI/C11+C21
2950 XLEFTD=YLOW/C11+C21
2960 XRITEU=YHI/C1+C2
2970 XRITED=YLOW/C1+C2
2980 L1=XRITEU-XLEFTU
2990 L2=XRITED-XLEFTD
3000 G=(LON1-LON)/(LON1-LO)
3010 XL=G*L2+XLEFTD
3020 XU=G*L1+XLEFTU
3030 D=(LAT-LATLOW)/(LATHI-LATLOW)
3040 XD=CINT(XL-D*(XL-XU))
3050 YD=CINT(D*(YHI-YLOW)+YLOW)
3060 GOTO 3390
3070 RAD(1)=YLOW
3080 RAD(2)=YHI
3090 C1(1)=C11
3100 C2(1)=C21
3110 C1(2)=C1
3120 C2(2)=C2
3130 FOR I=1 TO 2
3140 K=0
3150 IF I=1 THEN S=1
3160 IF I=2 THEN S=3
3170 FOR J=S TO S+1
3180 K=K+1
3190 A=1/(C1(K)   2)+1
3200 B=2*(174-C2(K))/C1(K)+2*514
3210 C=(174-C2(K))      2-RAD(I)    2+514 2
3220 Y1=(B+SQR(B  2-4*A*C))/(2*A)
3230 Y2=(B-SQR(B  2-4*A*C))/(2*A)
3240 IF Y1>235 THEN Y(J)=Y2
3250 IF Y1<=235 THEN Y(J)=Y1
3260 X(J)=Y(J)/C1(K)+C2(K)
3270 NEXT J
3280 NEXT I
3290 DVAL=(LON1-LON)/(LON1-LO)
3300 XL=DVAL*(X(2)-X(1))+X(1)
3310 YL=DVAL*(Y(2)-Y(1))+Y(1)
3320 XU=DVAL*(X(4)-X(3))+X(3)
3330 YU=DVAL*(Y(4)-Y(3))+Y(3)
3340 SVAL=(LAT-LATLOW)/(LATHI-LATLOW)
3350 XD=CINT(XL-SVAL*(XL-XU))
3360 YD=CINT(YL+SVAL*(YU-YL))
3370 GOTO 3390
3380 SET=20
3390 RETURN
3400 CLS:WIDTH 80
```

```
3410 SHELL "WS
3420 CLS
3430 GOTO 250
4000 REM*******************************
4010 PAD$="       NSC Processing Module        "
4020 GOSUB 650
4030 TES=0
4040 GOSUB 580
4050 PRINT
4060 PRINT
4070 PRINT"                                    "
4080 PRINT"    Disks for this module provided  "
4090 PRINT"    by NSC Staff.  Insert disk in   "
4100 PRINT"    B-Drive and enter RETURN, or    "
4110 PRINT"    enter a Q to Quit.              "
4120 PRINT
4130 COLOR 15: INPUT" ENTER OPTION DESIRED "; T$: COLOR 15
4140 IF T$<>"Q" THEN 4000: CLS
4150 GOTO 250
```

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